APPLIED SCIENCE DEPT.

CLAY WORKING MACHINERY

C. & A. POTTS & CO.
INDIANAPOLIS, INDIANA

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C. & A. POTTS & CO.

Equippers of

Complete Sand Mould Plants

Manufacturers of

Sand Mould Brick Machines, Mould Sanders, Disintegrators, Pug Mills, Roll Crushers, Granulators, Elevators, Hoisting Drums, Feeders, Moulds, Cars, Trucks, Barrows and Wire Rope Conveyors

All appliances used in the erection and operation of Sand Mould Brick Plants

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INDIANAPOLIS, INDIANA

THE LARGEST MANUFACTURERS OF SAND MOULD PLANTS IN THE WORLD

Complete Sand Mould Outfits Our Specialty

We manufacture and furnish everything necessary, from the Clay Bank to the Kiln. All machinery furnished under guarantee; we are responsible for results. Our plants are complete and modern in every respect.

Don't be misled by claims of our competitors that they can furnish *just as good*, they cannot do it, there is none such.

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FOREWORD

OUR LINE OF SAND MOULD MACHINERY.

THE practice is so common in catalogs and general advertisements to describe the articles shown as "THE BEST MADE," "NEVER BREAK," "NEVER WEAR OUT," "BEST AND CHEAPEST," that the use of the superlative in advertising has come to mean very little, or nothing, and the average purchaser pays but small attention to this part of the advertisement. The prospective buyer is therefore apt to judge of a line of machinery from several points of view:

First—The reputation and standing of the firm.

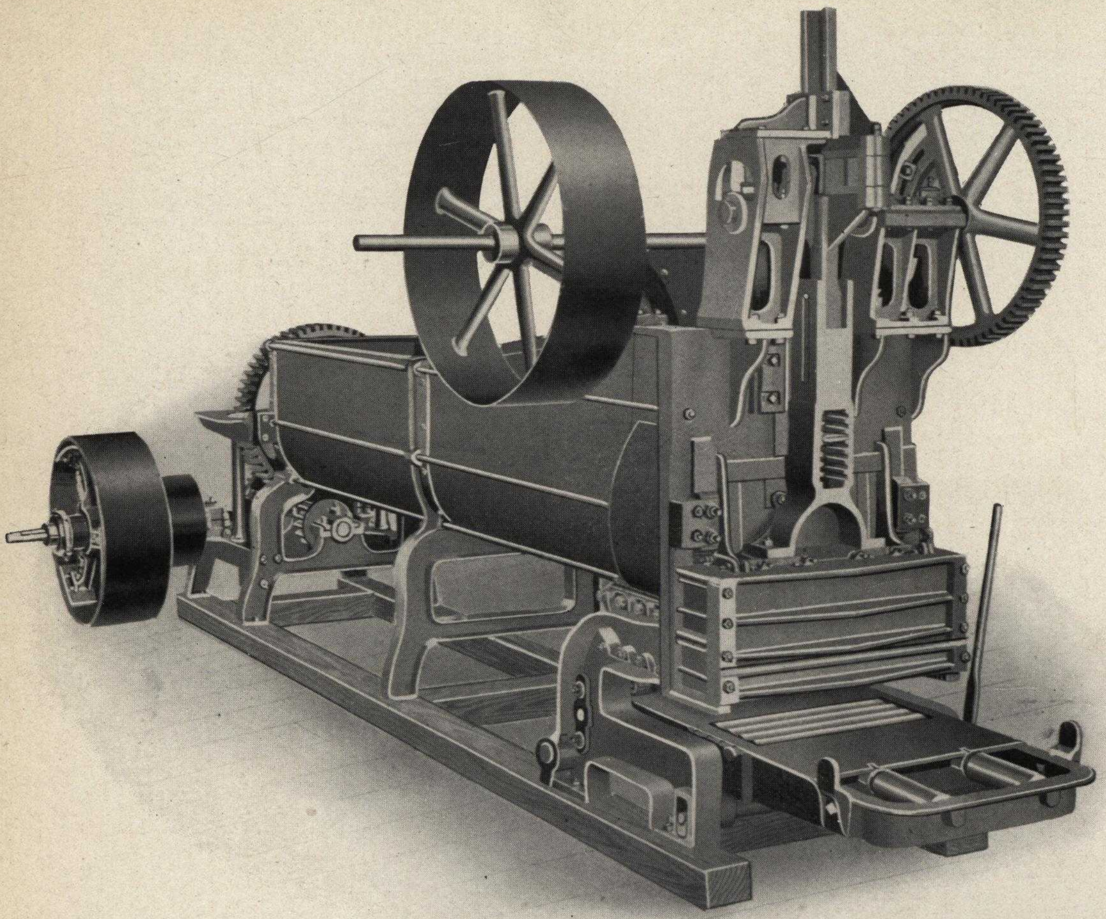
Second—The general character of their product as known to the trade.

Third—What others say about the concern's product.

Fourth—Personal judgment of the articles as represented, and

Fifth—Most important personal experience with the concern and its goods.

If, after 28 years under one management in the same line of manufacture, with a steady increase in business in this line as evidence of satisfactory service and good quality of machinery, it is not necessary for us to "blow our own horn" on Points Nos. 1, 2, 3, 4 and 5. The purpose of this catalog is to place in the posession of our customers, present or prospective, the information that will enable them to exercise the personal judgment called for in Point No. 4. Instead of merely illustrating we have endeavored to place before the trade such details of explanation and description as will enable them to form a fair idea of the machinery offered, and we think in this respect, the catalog will be found different, and we hope considered better than those that have preceded it.



HORIZONTAL BRICK MACHINE
All gears have gear guards

Dimensions and Weight of Horizontal Brick Machine

The pug mill is 12 feet 6 inches long, by 34 inches wide, and 34 inches deep at small end, 42 inches deep at front end.

Extreme length of machine from out to out is 21 feet.

Length of foundation is 17 feet. Width from out to out of foundation is 4 feet.

Height from foundation to the top of the machine is 5 feet 9 inches.

Height from foundation to top of disintegrator is 8 feet 4 inches.

The drive pulley is 42 inches in diameter, 12-inch face; running 129 revolutions per minute, delivers 10 moulds; 142 revolutions per minute, delivers 11 moulds; 154 revolutions per minute, delivers 12 moulds; 167 revolutions per minute, delivers 13 moulds; 180 revolutions per minute, delivers 14 moulds.

Power required, 20 horse.

Made with drive pulley at right angle with Pug Mill as shown in cut, or spur gear with drive pulley parallel with Pug Mill.

Weight of brick machine, 16,000 pounds.

With each machine we furnish all the pulleys, as shown in the cut; the main drive pulley, being a friction clutch, is very much better than the tight and loose pulley, which is generally used on brick machines. It is simple in construction, and has no parts to wear or break.

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Advantages of the Potts Horizontal Brick Machine

TEMPERING CAPACITY. Because the tempering shaft is independent of the press, and makes two revolutions to each mould filled.

THE PUG MILL is 12 feet 6 inches long, 34x34 inches inside at the small end, and 42x34 inches inside at the large end, insuring ample tempering capacity in either Surface Clays, Fire Clay or Shale. No extra Pug Mill is required to enable a thoroughly tempering of the clay. Our machine gives the best results.

THE PRESS is on the outside, delivering the clay into the moulds on a straight line, filling all parts of the mould under equal pressure. Every pallet will have six brick on it, all being equally filled, the same size and shape.

THE BRICK, being made from thoroughly tempered clay and delivered into the moulds under equal pressure, will have CLEAN, SHARP CORNERS, SMOOTH SURFACES, and will be STRAIGHT and SQUARE when burned.

SIMPLICITY. Having only one tempering shaft, there are fewer bearings exposed, less gearing to operate it, and no working parts in the clay or underneath the machine.

BEARINGS are long and large in diameter, no overhanging gear, every one having a bearing on each side, close up. No bearings bolted to timber, all in heavy cast iron frame, with planed surfaces to bear upon.

STRENGTH. All shafts are made of steel, the gear and crank shaft of cast steel. All parts are extra heavy and made from the best material money will purchase.

WORKMANSHIP is the best that is possible to obtain; every joint is planed, insuring good solid bearings; all bolt holes are drilled from the solid iron, the bolts fitting tight therein, insuring a machine that will stand continuous operation at a high rate of speed.

The Horizontal Stock Brick Machine

It is well known that the sand mould process for the manufacture of brick is no experiment, and that by this process any clay which can be moulded by hand will work successfully, shales and fire clays included. There is no market which will not purchase this class of brick in preference to those made by wire cut machines; especially is this the case with brick made by our Horizontal Machine.

We always recommend the use of the disintegrator in connection with this brick machine when working the clays direct from the bank.

The Horizontal Machine consists of one large Pug Mill, 12 feet 6 inches long, 34 x 34 inches at the small end, 42 x 34 inches at the large end. The Disintegrator is generally placed on the rear end of the pug mill, but can be placed on the floor level, using an elevator for raising the clay into the pug mill after it is ground. Passing through the center of this pug mill is the tempering shaft, 4-inch round steel. To this shaft are clamped eighteen tempering wings. This shaft is INDEPENDENT of the press which fills the mould, and can be run any number of revolutions necessary to thoroughly temper the clay. As these machines are shipped from our works, this shaft is geared to make TWO REVOLUTIONS to each mould filled. At this speed it will thoroughly temper any clay, shale or fire clay. The tempering wings are made from a special metal, which is very hard, and clamped to the shaft, so that when worn they can be replaced without disturbing it. The gear for driving this shaft is heavy and made from improved pattern. THE BEVEL GEAR, BEVEL PINION and SPUR PINION are made of CAST STEEL. To the opposite end of this pug mill is attached a heavy cast iron front, to which the pressing parts are fitted; this front is held in position by heavy rods passing the entire length of the mill. All surfaces to which the various parts are bolted are planed, insuring true and solid bearing. The vertical press is used in filling the moulds; the press box is filled by a large double wing on the tempering shaft, directly back of the opening into the press box. This wing, being double, and the tempering shaft to which it is attached making two revolutions to each mould, the feed wing passes the opening four times. This insures the press box being evenly filled with clay, and with the straight, vertical press, the moulds will be evenly filled, and the brick made will be STRAIGHT and SQUARE when burned.

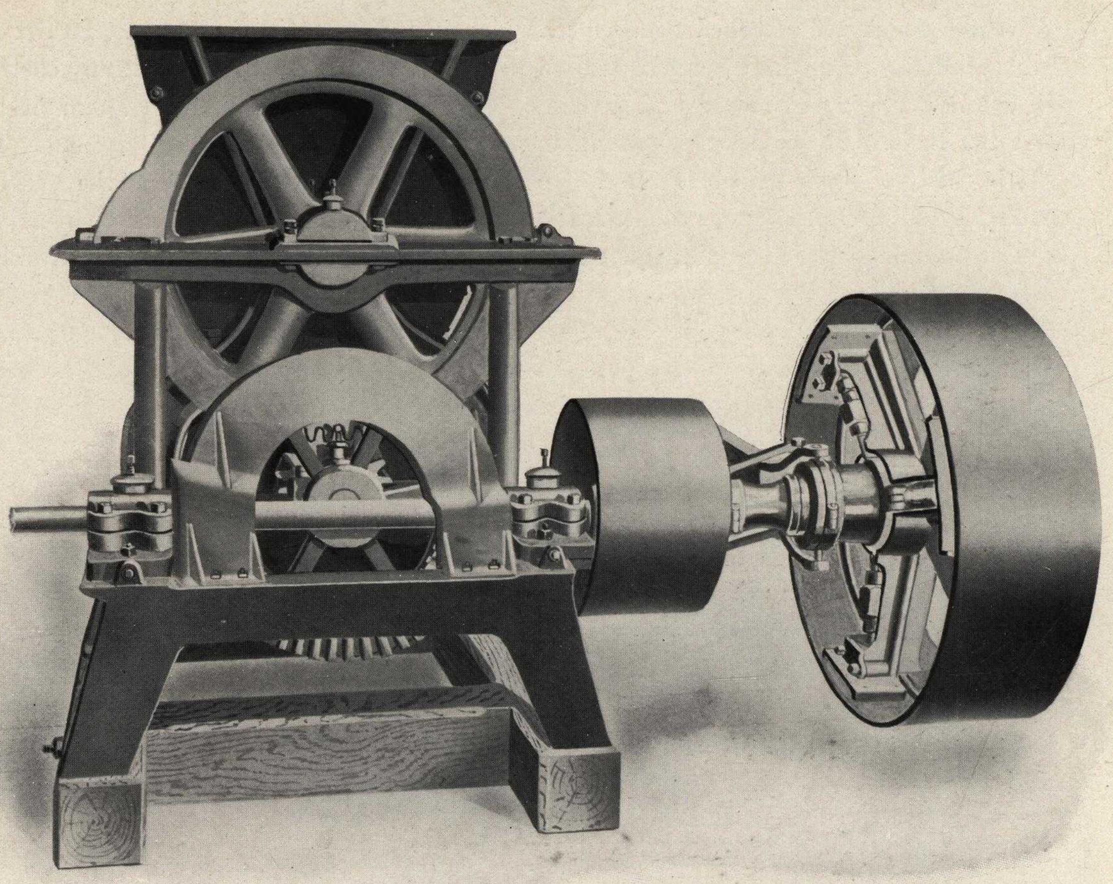
The moulds should be evenly sanded with clean, sharp sand. They are fed in at the left hand side of the machine, through an opening provided just back of the filled mould. At each revolution of the press, the pushout carriage moves an empty mould forward in position under the jack die, at the same time delivering the filled mould upon the table in front of the machine. The surplus clay is then scraped off and the brick are dumped from the moulds to pallets, or loaded on trucks and conveyed to the drying ground and dumped. The machine is provided with an adjustable mould stop. The table is easily and quickly adjusted to any depth of mould. It is made entirely of cast iron, is fitted with solid steel rolls underneath the jack die for the moulds to rest upon while being filled and allowing the moulds to slip freely from under the jack die. The table rests upon cams which are attached to a shaft, which in turn rests in the frame. To the end of this shaft is attached a lever which is within easy reach of the operator; if any obstruction comes between the mould and jack die, by drawing this lever toward him he can lower the table four inches, thus permitting any ordinary obstruction to pass out. The table is then raised and no brick lost. To the pushout shaft is attached the AUTOMATIC RELIEF which stops the delivery of moulds in case of an obstruction coming between the mould and jack die; this will operate and no harm will be done to mould or machine.

It is automatic, relieving in case of obstructions and adjusting itself upon the next revolution of the machine. If the obstruction is removed, the next mould will be delivered. The crank shaft is 3 inches in diameter, made of cast steel; the bearings on both sides of the crank are long and lined with the best grade of metal; by means of the yoke we are enabled to get bearings on both ends of the crank shaft; at the same time straight thrust on the plunger and connections, avoiding all unnecessary wear. The amount of pressure to enable filling the moulds is obtained by raising or lowering the large flat pin. The length of the stroke can be varied 8 inches, which is more than sufficient to the requirements of clay in any condition of temper. The end thrust of the tempering shaft is taken in a STEP BOX in the bracket around the large gear. This is clear of the pug mill and clay. All other machines of this class hold this end thrust with a collar on the tempering shaft inside of the pug mill, which is working in the clay, and quickly wears out.

Special Fire Brick

For the manufacture of Fire Brick and Fire Clay Tile we make a special pattern of the Horizontal Machine, while the general design of the machine remains unchanged. We increase to the size of Press Box and Jack Die the width and depth into which the moulds are fed. This special machine is capable of producing blocks up to 34 x 11 x 3½. Jack Dies are furnished to suit the various shapes and sizes, of which a great variety can be made.

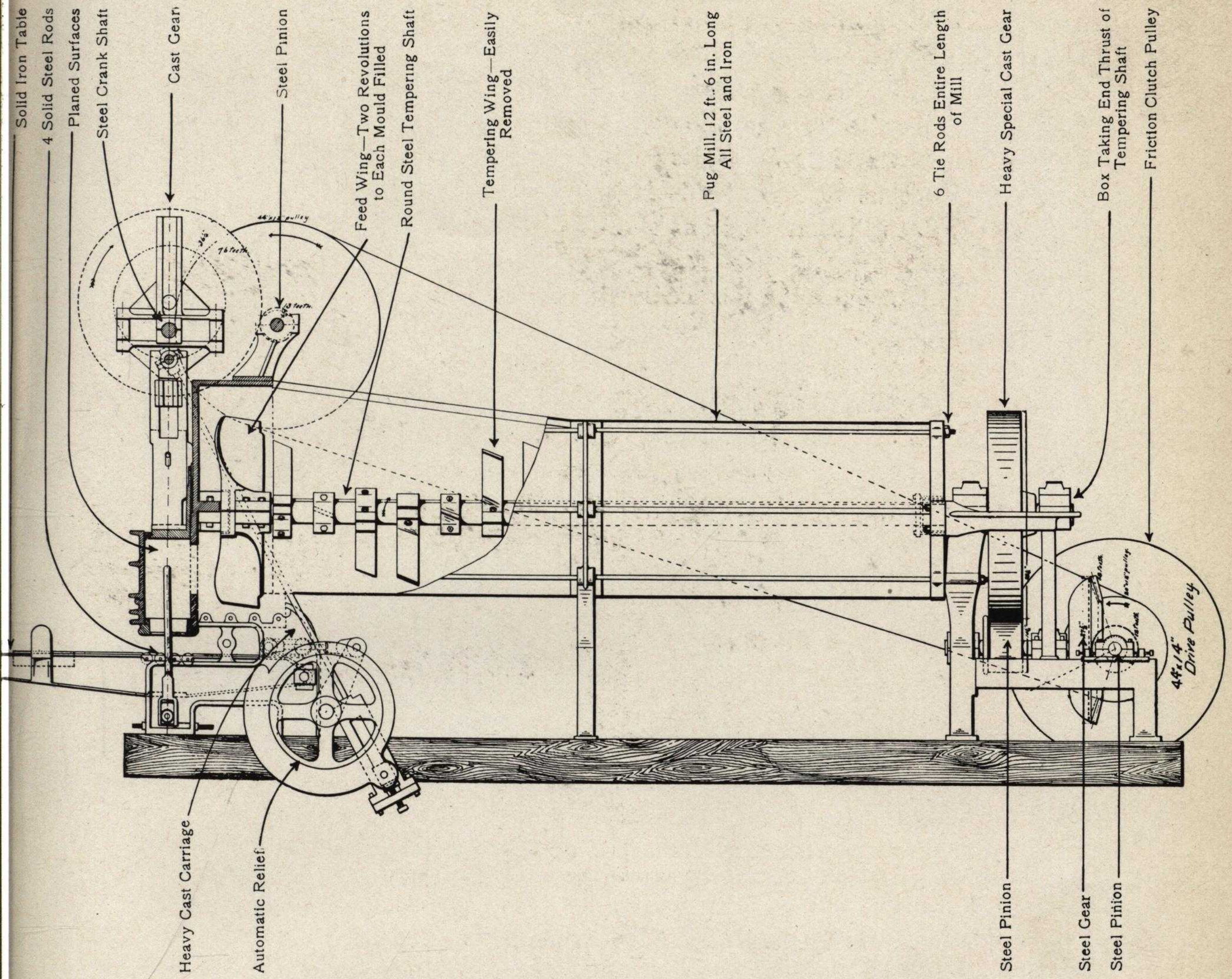
The product of this machine is superior in every way to the hand made article.



REAR VIEW OF THE POTTS ALL IRON HORIZONTAL MACHINE

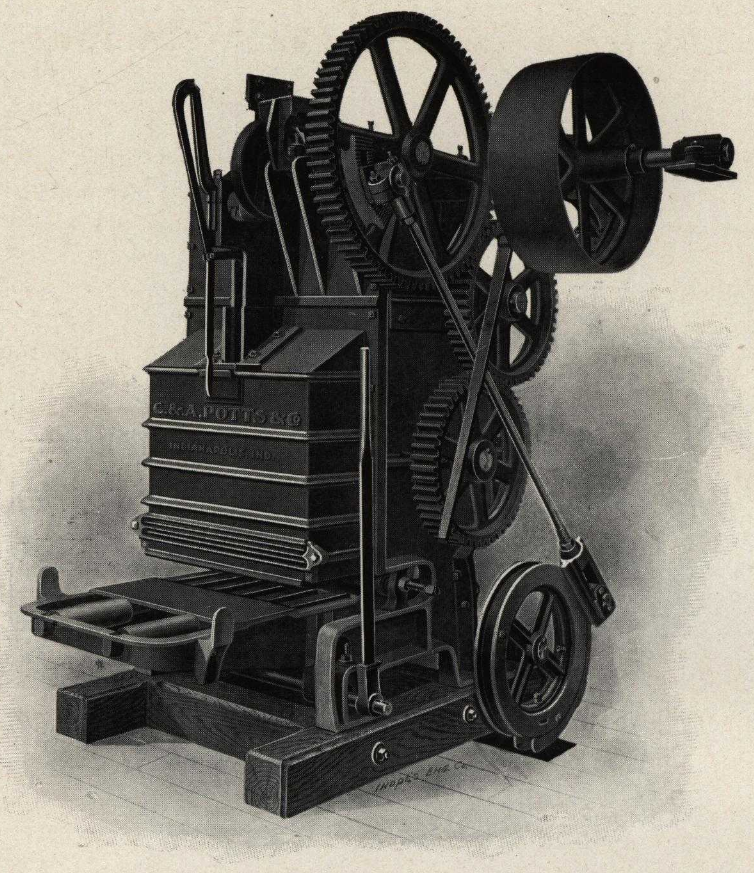
Showing plainly the construction of the rear end of the Horizontal Machine with guarded gears. The Bevel Pinion, Bevel Gear and Spur Pinion are cast steel; Master Gear, from special cut pattern, cast iron; the end thrust of tempering shaft taken by bearing in arch around large gear. All bearings large in diameter, bolted to iron frame, which is a part of machine proper. This frame, resting directly on the foundation, insures smooth running with least possible wear.

Compare this with any Horizontal Machine on the market. You will readily see our advantages, *it is important.*



SECTIONAL VIEW OF THE POTTS HORIZONTAL MACHINE

The arrows point to features not found in any Sand Mould Machine on the market. Every one of these features is necessary to make a machine that will thoroughly temper the clay and fill a six-brick mould perfectly. Drop any one of these features and you can not get proper results, at the same time have a machine that can be depended upon to make a given number of brick every day.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INDPLS. ENG. CO.

ALL IRON VERTICAL BRICK MACHINE
All gears have guards

Dimensions of Vertical Machine

The pug mill is two feet eight inches, by three feet wide, by four feet six inches deep.

Foundation four feet six inches long, four feet wide.

Height over all, eight feet.

Extreme length from front of table to back of machine, five feet eight inches.

Friction clutch pulley, thirty inches in diameter, ten-inch face.

Speed, fifty revolutions per minute, will deliver ten moulds.

Weight of machine, complete, 7,000 pounds.

These machines can be arranged on trucks so that they can be moved on rails from one pit to another in event more than one pit is used.

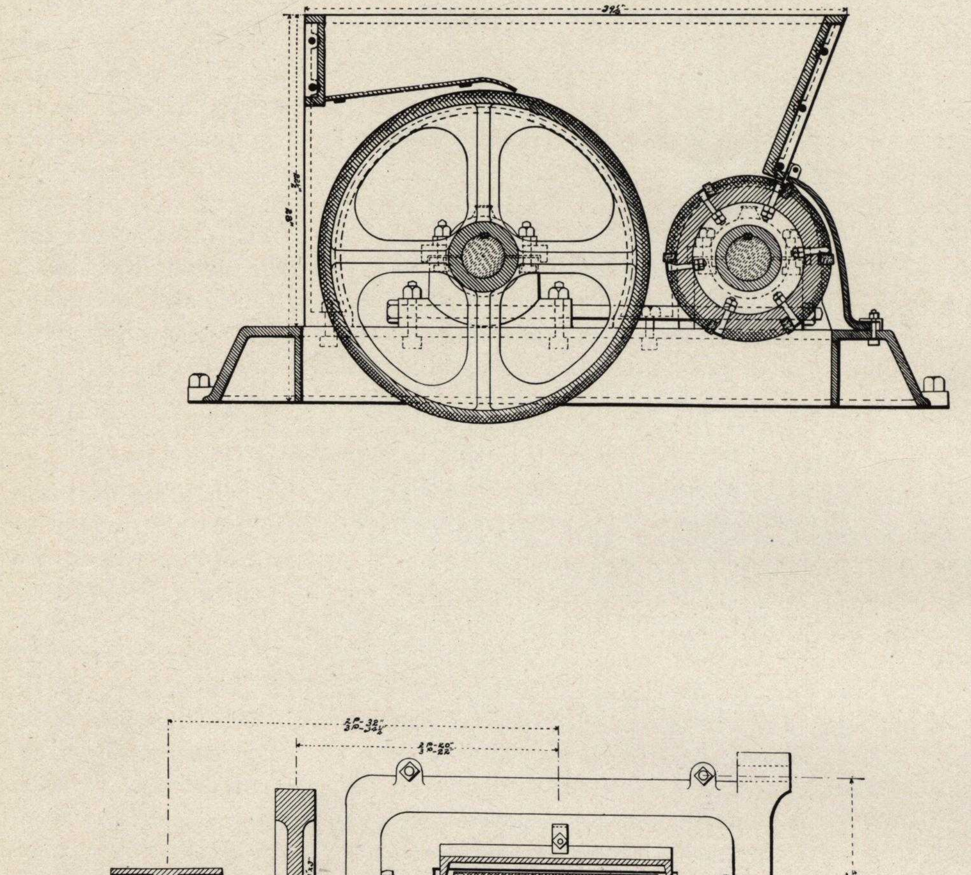
Power required for the brick machine, ten horse-power. To drive the brick machine, extra pug mill and disintegrator, twenty-five horse-power.

With each machine we furnish twelve brick moulds of any size desired. When the mould sander is purchased with the brick machine we furnish twenty-four moulds, countershaft and pulleys to drive it.

All castings are plainly numbered, so in case of breakage or when worn out duplicate parts can be ordered.

All Iron Vertical Brick Machine

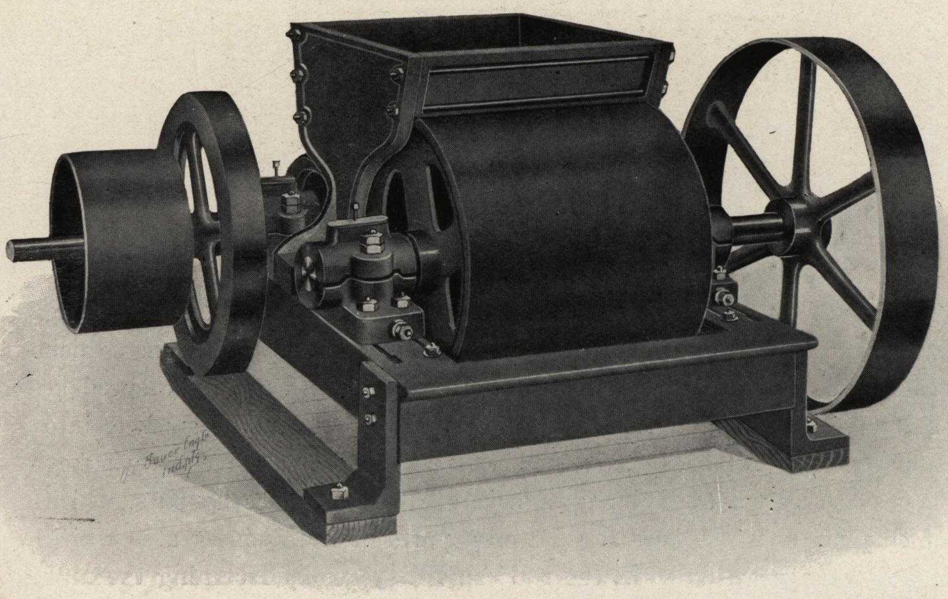
For yards of small capacity we recommend this machine; it can be used either in connection with a soak pit, in which the clay is soaked from twelve to twenty-four hours, or a pug mill and disintegrator can be attached to it, and the clay worked direct from the bank. For yards of small capacity or limited capital this machine is especially adapted; if soak pits are used, making a very cheap plant to erect. Later on, if the business justifies, the pug mill and disintegrator can be added, making a modern plant of any desired capacity. This machine is made to be driven by steam only. It consists of a square cast iron frame, 2 feet 8 inches by 3 feet, and is 4 feet 6 inches from the foundation sills to the opening into which the clay is fed; the tempering shaft being horizontal instead of vertical, as is generally the case with upright machines. The shaft extends entirely across the tempering drum, and is directly back of the opening into the press box; it is filled solidly full of wings, which make 1½ revolutions to each mould filled, and delivers the clay in a perfectly straight line under the plunger, insuring an equal amount of clay at both ends of same, and that the brick will be straight and square and of equal size when burned. The speed at which this tempering shaft runs, and the number of wings upon it thoroughly mixes the clay. In all other machines of this class the tempering shaft is vertical and makes only one revolution to every two or three moulds filled; consequently there is very little tempering or mixing done by these machines. The press is inside of the tempering drum, working directly in the clay, so there can be no leakage of clay or unusual wear upon the plunger. The moulds, after being sanded, are placed into the machine through an opening on the left hand side, and delivered under the jack die by the pushout carriage. The carriage is made of one piece of casting, having three roller bearings; there is no light wooden frame or other parts to get out of order. By right and left hand turn buckles which connect this carriage to the pushout arms, it is easily squared with the die, or the distance which the moulds are pushed under the die is adjusted. To the shaft to which the pushout arms are connected is attached an automatic relief, providing against breakage of the moulds or machine by obstruction of any kind catching between the mould and die. The pushout carriage will not operate until such obstruction is removed. The table is one solid piece of casting, and rests upon cams attached to a shaft underneath it. At the end of this shaft is a lever which is within easy reach of the operator, who, by drawing this lever towards him, lowers the table four inches, permitting any ordinary obstruction to be removed without the loss of one mould of brick. It is provided with an adjustable mould gauge, and provisions are made for raising or lowering to suit any depth of mould that may be used. The length of the stroke of the plunger can be varied seven inches, which is more than sufficient to meet the requirements of clay in any condition of temper. The pug mill, generally 12 feet long, is attached to the back of the machine, and feeds the clay directly in on the wings back of the press, where it receives additional tempering or mixing. In connection with the pug mill we recommend the use of the disintegrator if the clay is to be worked direct from the bank. This machine will grind the clay, leaving it in the best possible condition for being tempered; it will grind the small stones so fine that they will not show in or damage the brick, and will separate the large ones. The disintegrator can be placed on the rear end of pug mill, under a platform, and the clay dumped on to this platform, then shoveled into it; or on the floor level, using an elevator to convey the clay to the pug mill. These machines are well built, every joint being planed, insuring solid and substantial bearings; the shafts are of steel; the gear of improved pattern, and large for the work required of them. All bearings are outside of the frame, none being exposed to the clay. For a strong and durable machine this has no equal.



SECTIONAL VIEWS OF THE POTTS DISINTEGRATOR

The Potts Disintegrator

Consists of two cast rolls having *chilled surfaces*, one of these rolls being twice the diameter of the other; the large roll is a plain smooth one, which acts as a feeder, the capacity of the machine depending upon the speed at which it runs. The small roll has six grooves or slots in the surface, into which hard steel bars are fitted; these bars are held at each end by a key which passes through the roll; these keys are held in place by nuts, which are of easy access. The bars are the only parts of the disintegrator which wear, and when worn down to the roll can be set out by loosening the nuts on the keys and raising same. This leaves the bar free so that it can be raised and the liners which are furnished with each machine can be placed under them. This makes a solid bearing the entire length of the bar and overcomes all danger of the bar springing or breaking. The large roll makes from 25 to 40 revolutions per minute, while the small one runs 800 to 1,000 revolutions per minute. The differential speed of the two rolls and the cutting action of the steel bars divides or granulates the clay. As will be seen by referring to sectional cut on the opposite page, the 24-inch roll is cast with spokes or arms in it, the rim being very heavy. This roll is made in one section, having two sets of arms in the rolls. The small or cutting roll is cast solid. It is keyed to the shaft so that when worn out they are easily removed. The frames of the Nos. 1, 2 and 3 machines are made in one solid casting; the bearings for the small roll are cast solid to the frame. The surface of the frame is planed and the bearings for the large roll are bolted to it. There is a heavy rod passing through both sets of boxes, tieing them solidly together. When desired to change the opening between the two rolls the same may be done by loosening the nut on the tie rod and slipping the box of the large roll. The rolls are made from the best grade of iron and are *chilled* from ⅜ to ½ inch deep. Unless otherwise specified these disintegrators are driven by two belts. We manufacture a friction for driving slow roll when desired, the double belt machine being preferable.



STYLE "A" DISINTEGRATOR

Dimensions of Style "A" Disintegrator

No. 1 "A" DISINTEGRATOR, capacity of 20,000 to 25,000 brick per day; weight, 2,000 pounds.

Feed Roll is 24 inches in diameter and 12-inch face, runs 35 revolutions per minute.

The Grinding or Speed Roll is 12 inches in diameter and 12-inch face; has six steel bars in it, and a 12 x 8 pulley, which should run from 800 to 900 revolutions per minute.

Requires a floor space 4 feet long by 3 feet wide, and is 2 feet and 7 inches high.

No. 2 "A" DISINTEGRATOR, capacity 35,000 to 40,000 brick per day; weight, 2,400

Feed Roll is 24 inches in diameter, 15-inch face, runs 35 revolutions per minute.

Grinding or Speed Roll is 12 inches in diameter, 15-inch face; has six steel bars and a 12 x 8 pulley, which should run from 800 to 900 revolutions per minute.

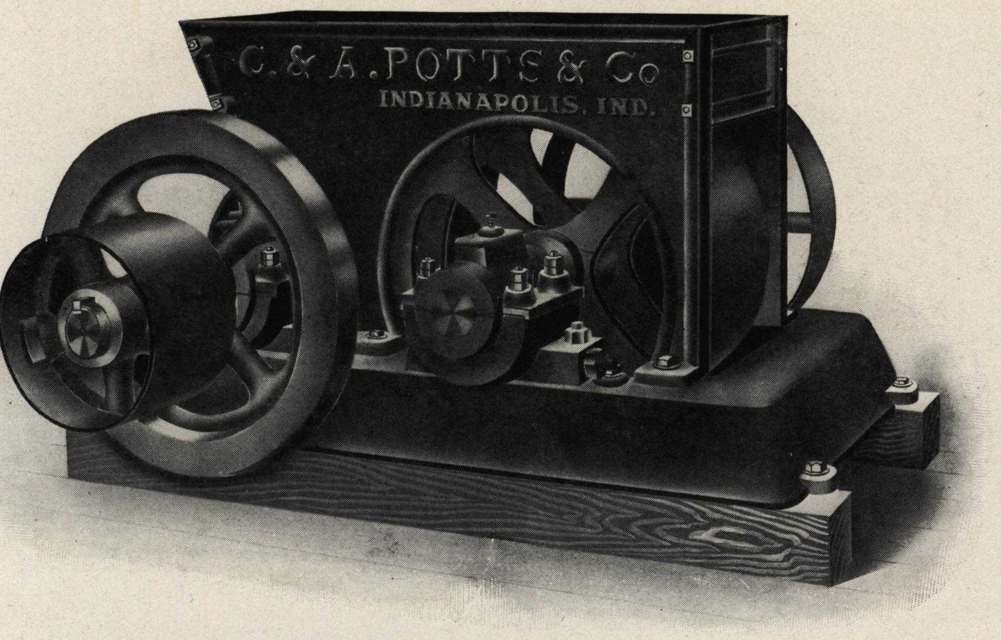
Requires a floor space 4 feet long by 3 feet 3 inches wide, and is 2 feet and 7 inches high.

No. 3 "A" DISINTEGRATOR, capacity of 45,000 to 50,000 brick per day; weight, 3,000 pounds.

Feed Roll is 24 inches in diameter by 20-inch face, runs 35 revolutions per minute.

Grinding or Speed Roll is 12 inches in diameter and 20-inch face; has six steel bars; the pulley is 16 x 8 and runs 800 to 900 revolutions per minute.

Requires a floor space 4 feet long by 3 feet 5 inches wide, and is 2 feet 7 inches high.



STYLE "P" DISINTEGRATOR

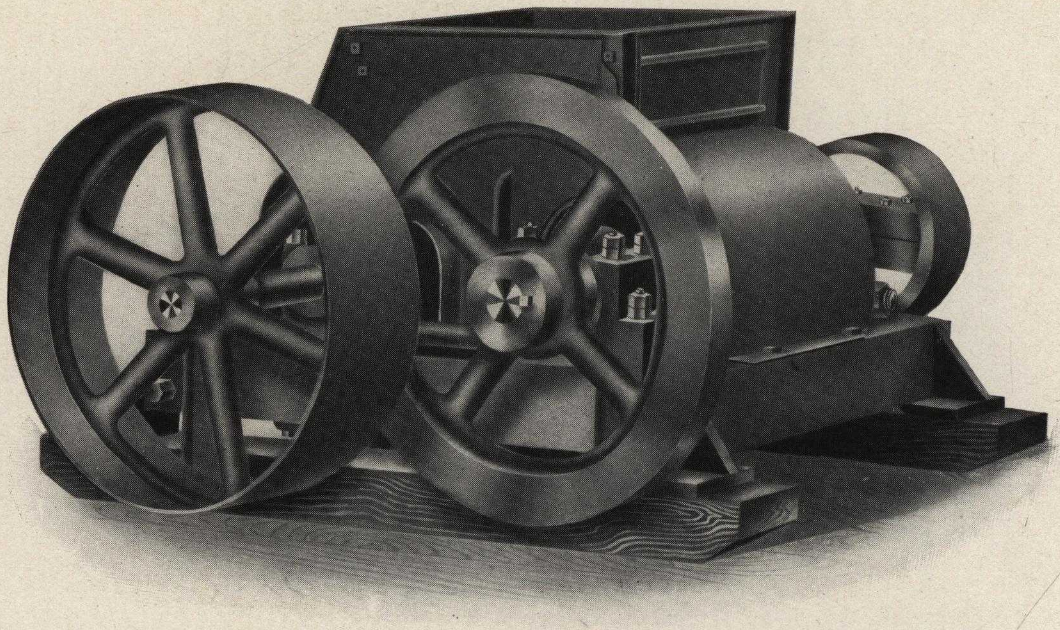
Dimensions of Style "P" Disintegrator

The rolls in the style "P" machine are of the same size as those in the "A" machine and should run at the same speed. The drive pulleys are of the same diameter and width of face; the difference in the two styles of machine being that the shafts in the "P" machines are one-half inch larger in diameter than those of the "A." These shafts run in self-oiling boxes; the frames are heavier and of different design.

No. 1 "P"—Floor space, 4 feet 6 inches long; 2 feet 4 inches wide; 2 feet 4 inches high. Weight, 2,500 pounds; capacity, 20,000 to 25,000 brick per day.

No. 2 "P"—Floor space, 4 feet 6 inches long; 2 feet 9 inches wide; 2 feet 4 inches high. Weight, 3,000 pounds; capacity, 35,000 to 40,000 brick per day.

No. 3 "P"—Floor space, 4 feet 6 inches long; 3 feet 2 inches wide; 2 feet 4 inches high. Weight, 3,800 pounds; capacity, 45,000 to 50,000 brick per day.



STYLE "P" DISINTEGRATOR

Dimensions of No. 4 Disintegrator

As built in the larger sizes, having a capacity of 75,000 to 150,000 brick per day.

The shafts in this machine are unusually large and made from the best grade of steel. Journal boxes long, lined with the best grade of metal, and chain oiling.

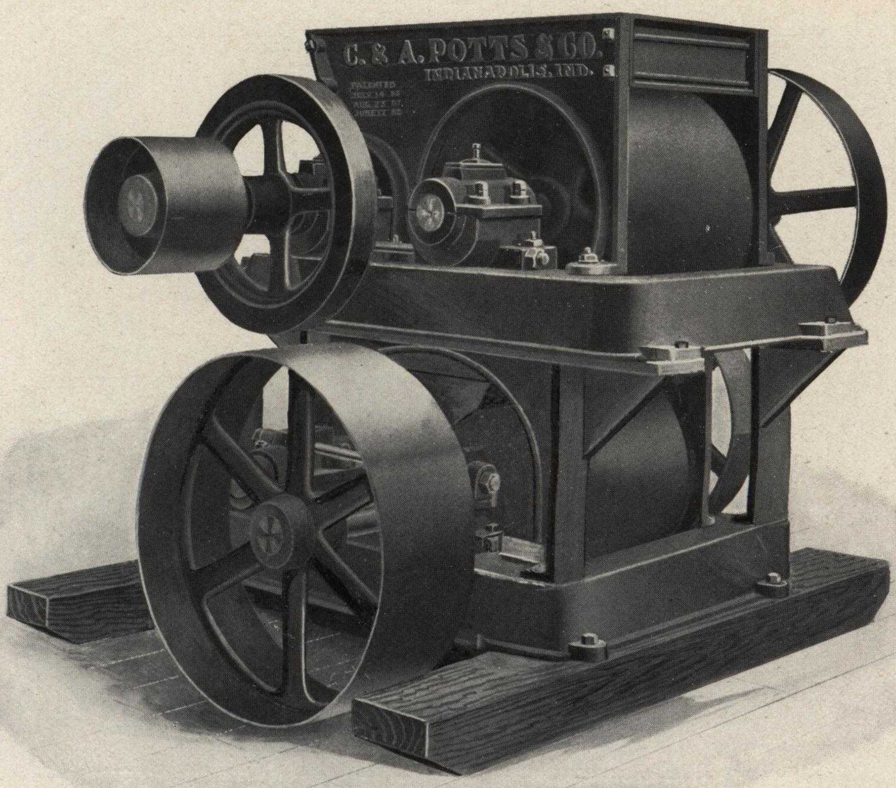
The rolls are heavy, one never having been broken. They are made from special iron and thoroughly chilled for a machine of large capacity. This has no equal.

No. 4 "P" DISINTEGRATOR, weight, 6,000 pounds.

Feed Roll is 24 inches in diameter by 24-inch face, and should run 35 revolutions per minute. It has a 30 x 8 inch pulley on it.

The Grinding or Speed Roll is 14 inches in diameter by 24-inch face; has six steel bars, ¾ x 1¾ inch; the drive pulley is 16 x 12, and should run from 800 to 900 revolutions per minute.

Requires a floor space 5 feet 6 inches long by 3 feet 1 inch wide, and is 3 feet high.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INDIANAPOLIS, IND.
PATENTED

STYLE "P"

Compound Disintegrator and Roller Crusher

This machine is especially adapted to clays having limestone or streaks of shale in them. The disintegrator is placed over the roll, the clay passing first through it; this overcomes all danger of choking or clogging from hard, dry, or wet sticky lumps of clay; and enables working the clay direct from the bank, which could not be done in the ordinary smooth roll crusher. The slow roll in the disintegrator holds back the clay, making a steady feed, and avoids all danger of choking the under rolls. The better plan is to feed this machine either by a granulator or elevator. The smooth rolls in the No. 2 machine are 18 inches in diameter by 15-inch face. In the No. 3 machine, 18 inches in diameter by 20-inch face. The rolls in the disintegrator and crusher are made from special white metal which is very hard, and are thoroughly chilled. The smooth rolls run at differential speed; the shafts in both machines are of steel, large in diameter, and run in improved, self-oiling boxes. We make this machine driven either by gear or each roll driven by independent belt. The bearing for the fast roll is cast solid to the frame of the machine; the bearings for the large roll are bolted to the frame; the two bearings are tied together by heavy rods; this permits of adjusting the space between the rolls, at the same time making them perfectly rigid. The large roll in the disintegrator and both rolls in the crusher are provided with adjustable scrapers. These machines are thoroughly built; we have spared neither material nor mechanical skill to make them the best.

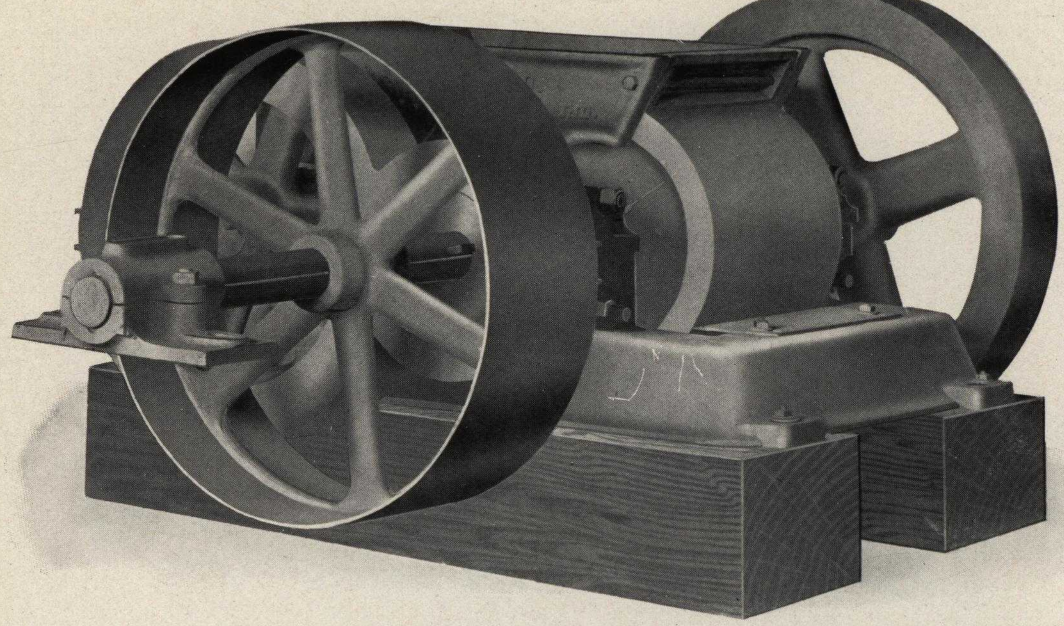
The compound machine requires the same floor space as that given for the disintegrator, but is 4 feet 5 inches high.

The No. 2 "P" compound machine weighs 6,500 pounds.

The No. 3 "P" compound machine weighs 8,000 pounds.

The speed of the fast roll in the crusher is 250 revolutions per minute; the drive pulley 30 inches in diameter by 10-inch face. The speed of the slow roll is 150 revolutions per minute; the rolls are driven by gear connecting them, thus only one belt is required; the fast roller shaft has a heavy balance wheel attached, making it run smooth and steady; no jerk upon the drive belt.

The capacity of the compound machines is the same as that given for the disintegrator.



STYLE "P" SMOOTH ROLL CRUSHER

Dimensions Smooth Roll Crusher

The Smooth Roll Crusher has extra heavy shafts running in ring oiling bores. The bearings for the fast roll shaft are cast rolled to frame and the slow roll bearings fitted to frame. The two bearings are tied together with heavy rods; this permits of adjusting the space between the rolls, at the same time making them perfectly rigid. The rolls are provided with adjustable scrapers. The rolls are made of the best of chilled iron. These machines are thoroughly built—we have spared neither material nor mechanical skill to make them the best. We make them to drive with one or two belts. We make three sizes of these machines with the following size rolls:

No. 2 "P"—18 inch diameter by 15 inch face.

No. 3 "P"—18 inch diameter by 20 inch face.

No. 4 "P"—18 inch diameter by 24 inch face.

The Roller Crushers have about the same capacity as the Disintegrators.

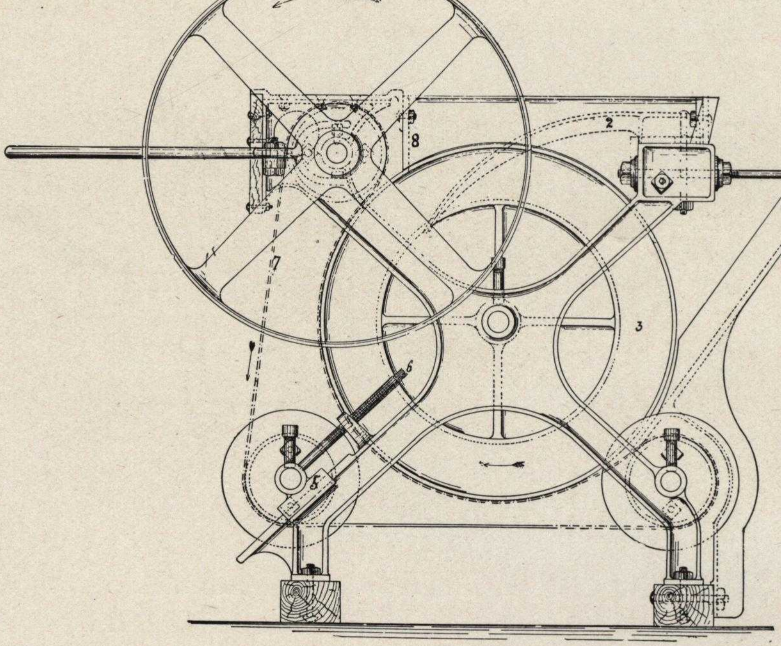
Clay Grinding Machinery

As the originators of the Clay Disintegrator we have had unlimited experience in the grinding of various clays under all sorts of conditions. This experience has enabled us to perfect a complete line of Crushing Machinery suitable for all conditions, and which has no equal for strength and durability.

Our line is complete and puts us in a position as having no favorites, but to furnish the machine best adapted to the clay and conditions; making no claim to grind shale of fire clays, but to be in a position to increase the output of the dry pan by grinding all tailings ready for the Pug Mill or Mixer.

We are ready to investigate any problem or question, and are in a position to furnish Crushing Machinery which will give desired results.

We are in a position to build any style of Disintegrator or Crushing Machinery to order and will give same our best attention, using the very best of mechanical construction and material in the manufacture of same.

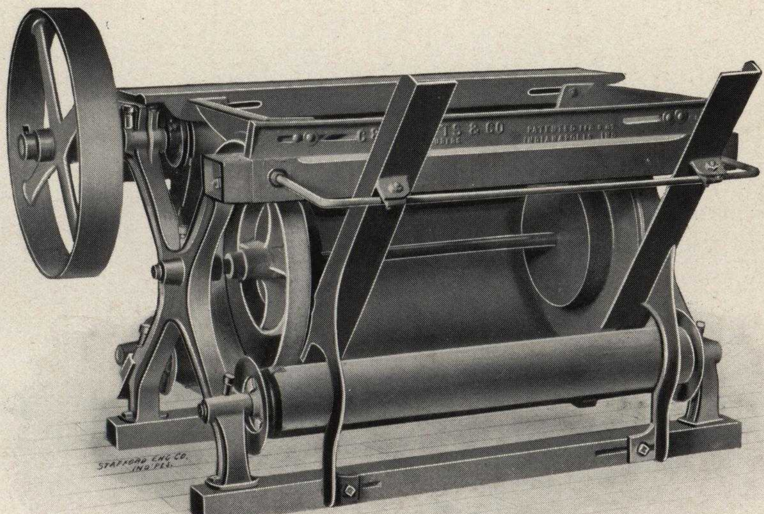


SECTIONAL VIEW OF POTTS MOULD SANDER

Mould Sander

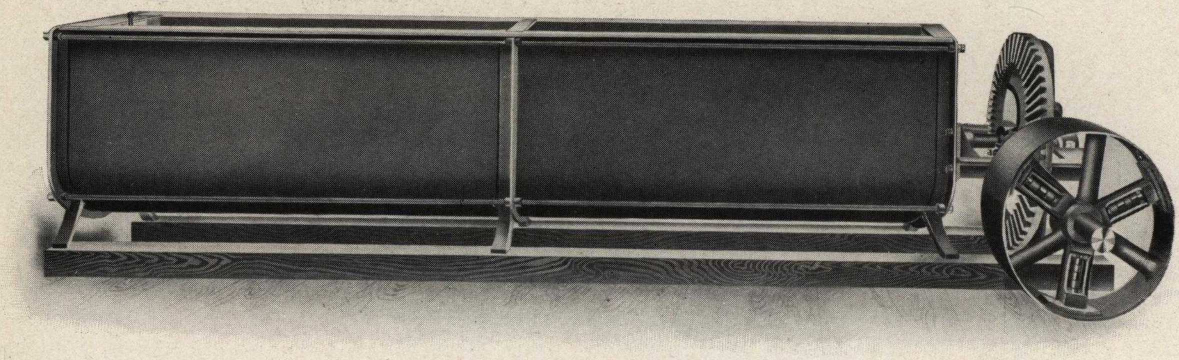
The sectional cut above shown gives a perfect view of the construction and principle upon which the Potts Mould Sander works. The dotted line No. 7 represents the belt which carries the sand when the machine is empty of moulds, and when in operation carries the moulds. As will be seen, the large heads are of such a diameter that they form a trough or box in which the sand will rest. The moulds are placed right side up, one against the other in guides marked No. 1. They follow down, dropping onto the belt, which carries them around and delivers them upside down on guides marked 2. The heads, No. 3, are loose on the shaft, being held from slipping endwise by set collars, one on each side. By loosening the collars these heads can be moved to suit any length of mould being used. The guide No. 1 is also held by an eye-bolt, No. 4, so that it can be moved to suit the length of mould being used. The box, No. 5, is fitted to the frame and held with a set-screw, No. 6, so that the belt can be tightened, as it may stretch from use. The plate, No. 8, is of cast iron, making a strong place for the operator to bump his moulds against, knocking the loose sand from them; as the moulds are upside down, the sand drops directly back into the machine.

The pulley is 26 inches in diameter, 4-inch face. When running nine revolutions per minute it will deliver 12 moulds; this pulley is fitted with clutch and lever, which enables the operator to stop and start instantly. When ordering machine give the length of moulds over all and we will adjust it before shipment to suit your moulds. Always state on which side of the brick machine the sander stands when you are facing it. Weight. complete, 900 pounds.


STAFFORD ENG. CO.
IND'PLS.

The Potts Mould Sander

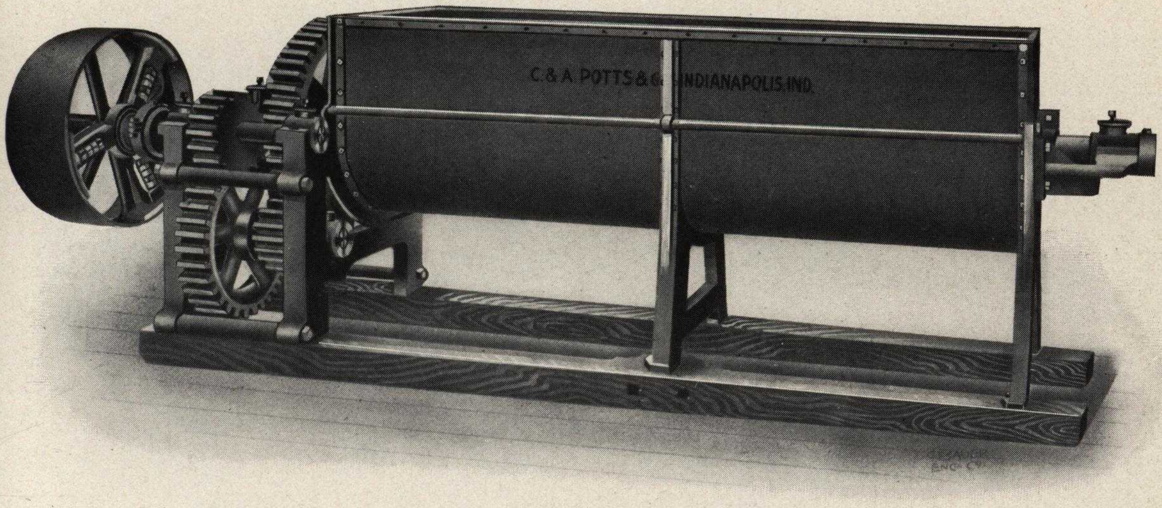
This machine is indispensable on brick yards in which the sand mould machine is used; it sands the moulds perfectly. A boy fourteen years old will operate it, and he can be taught in a few minutes to do this work, thereby dispensing with skilled labor. As will be seen by referring to sectional cut on opposite page, the moulds are carried through the sand by a rubber belt and not dragged or forced over a sheet-iron surface, which is common with most sanders now on the market. In such machines the bottom irons on the mould are soon worn away. We have placed our machines on yards where such machines as mentioned above have been used, and made a saving of THREE to FOUR sets of moulds per season. We know our competitors claim that the belt used in our machine is expensive (they have to make a claim of some kind; they can not say it does not do the work). But then which is the cheaper, one sander belt to replace in two or three years, or three or four sets of moulds per season? It is impossible for the moulds to catch in the feed rack, as is the case with other machines; it does not waste or spill the sand, neither can the sand leak through the vents of the moulds, as is the case with machines in which a cylinder is used having mould receiving openings. Our machine is easily and quickly adjusted to any size mould. The moulds passing through the sand are sanded on the outside, which overcomes the most serious objection to other machines in that the clay will not stick to the outside of the moulds. The moulds are evenly filled with sand, and are no longer in the sand than in other machines; the time all depending upon the number of moulds the brick machine is making per minute. We claim and guarantee (and will ship this machine subject to trial) that the Potts Mould Sander is far superior to any other machine on the market.



No. 1 ALL IRON PUG MILL
All gears covered with guards

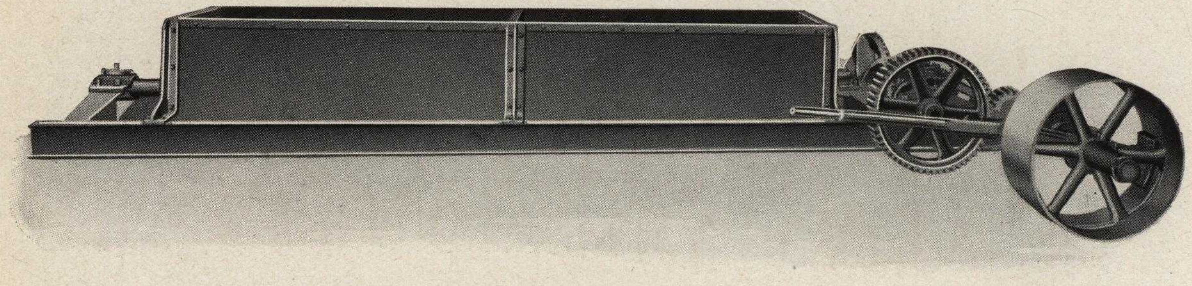
The above cut shows our All Iron Pug Mill. This is made of $\frac{3}{16}$-inch steel boiler plate; the ends and center are made of heavy cast iron. This adds to the strength of the machine very much. The rods extend the entire length of the machine. This mill has a capacity of 35,000 to 40,000 brick per day. We make these with the Disintegrator attached when desired. With this Pug Mill we furnish a 30x10 friction clutch pulley, which should run 90 revolutions per minute. This can be put on either side desired by the purchaser. We make these mills in any length desired, from 6 to 12 feet.

Weight of the 12-foot mill, 2,000 pounds. Weight of the 6-foot mill, 1,500 pounds. Weight of the combined Disintegrator and Pug Mill, 12 feet long, 5,000 pounds. The Pug Mill is 3 feet high by 2 feet 7 inches wide. Pug Mill and Disintegrator is 5 feet 7 inches high.



DOUBLE GEARED IRON PUG MILL
All gears covered with guarder

The above cut shows our heavy double geared Pug Mill, the drum of which is made of $\frac{3}{16}$-inch boiler plate. The cast ends and center piece are very heavy. This machine has been constructed for pugging clay for the auger machine. It has a capacity of from 50,000 to 60,000 brick per day. The tempering shaft is $3\frac{1}{2}$-inch hammered steel, to which the wings are clamped. The wings are made very wide and heavy. It is geared back six to one. The gear on the tempering shaft has a 6-inch face, and the intermediate gear a 5-inch face. The end thrust of the tempering shaft is taken by an outside bearing, which is clear from the dirt and dust so that there is no danger of its heating or cutting. At the delivery end of the shaft the bearing is extended beyond the frame of the machine, so that it is clear of the dirt and will give no trouble from cutting. The end of the mill is closed. Between the bearing and the end of the mill there is a steel cutting knife. As will be seen by referring to the cut, the frame in which the gear is held is very strong and substantial. We make these mills in any length from 6 to 12 feet. The 12-foot mill weighs, complete, 5,000 pounds. They are furnished with a 30x12-inch friction clutch pulley, which should run 145 revolutions to temper clay for 50,000 brick per day.



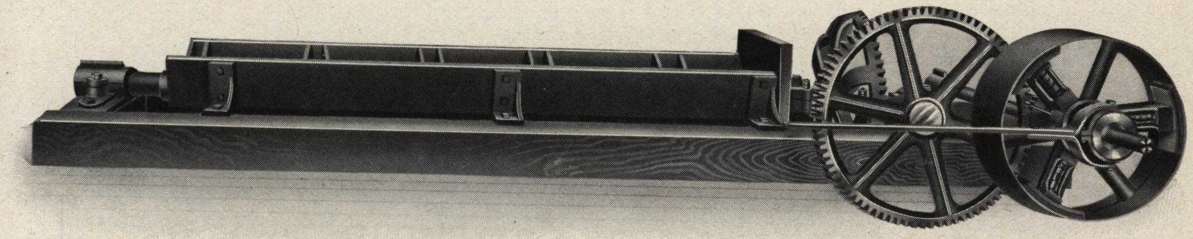
STEEL GRANULATOR
All gears covered with guards

The above cut shows our all iron and steel Granulator intended for feeding wet and sticky clays. This machine will work successfully in clays which can not be handled in Granulator shown on page 25.

The shaft is 3½ round steel, the wings are made of heavy cast iron with wide face, clamped on shaft so they are held securely to shaft and easily replaced.

The base consists of 6-inch I beams, the steel drum of Pug Mill is securely bolted to the same.

This mill is made any length desired, either beveled or spur gear, is fitted with a 30x10-inch friction clutch pulley. This machine, the same as all Pug Mills and Granulators manufactured by us, has step box for taking end thrust of shaft and does not depend upon set collar inside of the mill, which is exposed to the clay and soon wears, causing annoyance and expense.

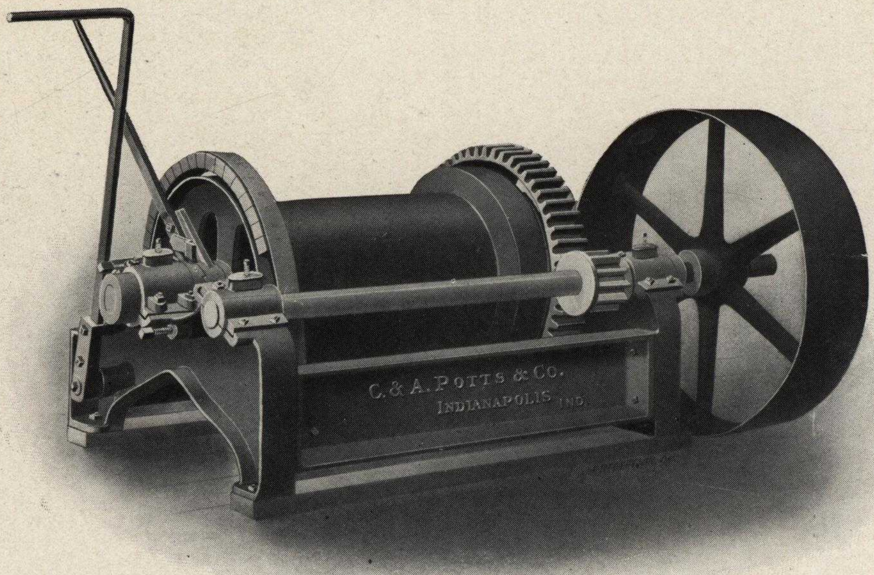


GRANULATOR OR FEEDER
All gears covered with guards

We designed this machine as an Automatic Feeder for our Brick Machines, and to save the labor of shoveling the clay into them. We have put up several plants and avoided the use of all labor in shoveling the clay, making a saving of from $4 to $5 per day. As will be seen, the machine is heavily geared; the shaft is 3½-inch steel; it has long bearings which are large in diameter and are lined with the best grades of metal. The wings are made of cast iron. The end thrust of the shaft is taken by the outside step box and not by a collar on the inside of the frame, as is customary with other machines of this kind. When the clay is in hard, dry or wet, sticky lumps, this machine will granulate them, putting it in such a condition that the crushers or disintegrators will grind it easily. It is a perfect feeder, and when once adjusted to feed a certain amount of clay per day it can be depended upon doing this work regularly. The main frame is made of 8x8 timber. All joints are mortised and tenoned, and the rods extend entirely through the frame; they are fitted with a 30x10 friction clutch pulley. Made with either bevel or spur gear to suit location.

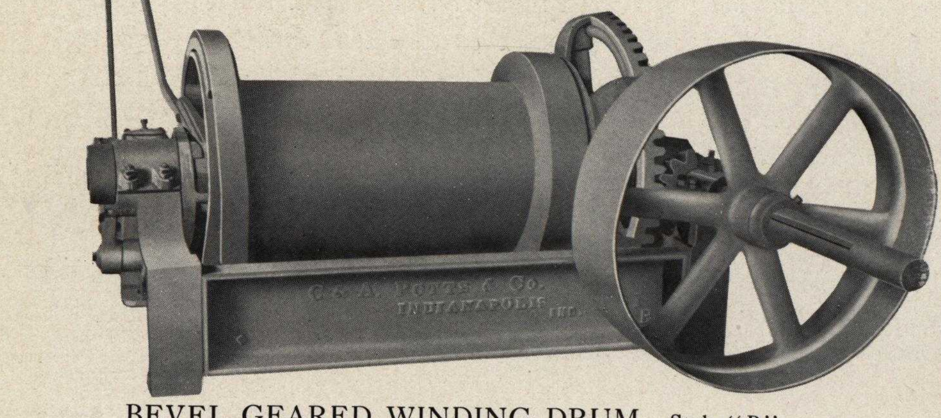
The bevel gear and bevel pinion are cast steel.

The Granulator is set over the Disintegrator, feeding the clay regularly to the same. The clay is dumped direct into this machine from the cart or car, thus saving all labor shoveling. The clay, being more thoroughly mixed, permits of setting the rolls of Disintegrator closer together, getting better results from this machine in grinding capacity. All sudden jerk is taken from engine and shafting because of regular feeding.



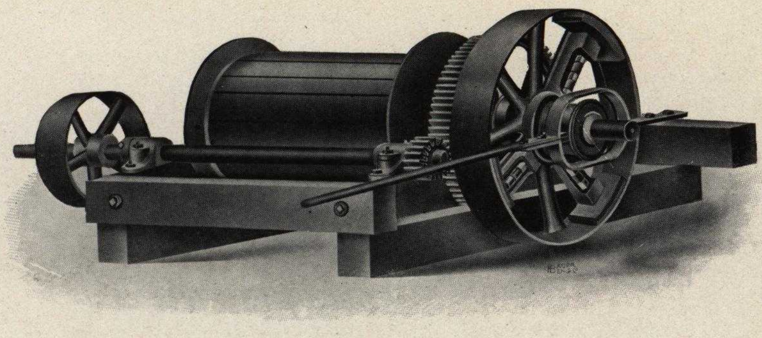
SPUR GEAR WINDING DRUM. Style "B"

This drum and Frame are made entirely of iron. It is heavy, strong and durable. The friction is tightened by a combination of wedge and screw, being simple in construction, and positive. The drum being cast iron insures a smoother surface for winding rope on. Also being 18 inches in diameter, overcomes all danger of breaking the strands of the wire rope, which is a common occurrence with drums of smaller diameters. Our drum will save difference in cost over others in the one item of rope in one year. The gear is 30 inches diameter, 4½-inch face; drive pulley 30 inches diameter, 8-inch face; drum shaft, 3-inch steel.



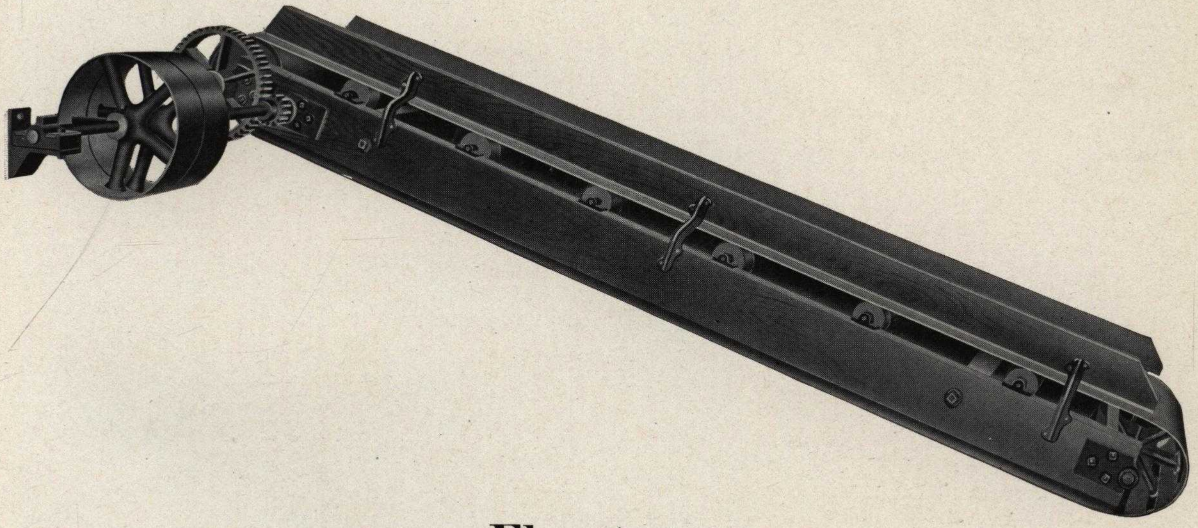
BEVEL GEARED WINDING DRUM. Style "B"
All gears covered with guards

This machine is made in two sizes, the only difference being in length of drum. No. 1 Drum, 18 inches diameter, 21-inch face; carry 500 feet of ⅝ wire rope. No. 2 Drum, 18 inches diameter, 28-inch face; carry 700 feet ⅝ wire rope. It is provided with positive and powerful brake. The friction and brake lever come at one end of the machine both within easy reach of the operator, without his moving. This is without doubt the best winding drum on the market.



WINDING DRUM. Style "A"

Since steam has taken the place of the horse in tempering the clay and moulding the brick, and has proven to be much cheaper and more reliable, there is no reason why steam should not be used for transporting the clay from the bank to the brick machine, as it requires no driver and is no expense while idle. Clay can be drawn into the machine in the early spring when the roads are bad as readily as in the dry summer months. As will be seen by referring to the cut, the winding drum is self-contained and is very strongly geared. All machines for this purpose now on the market use a friction pulley and eccentric for starting and drawing the clay. To get the power necessary to draw up a steep incline these drums must be geared. The car is returned to the bank by its momentum, going back the incline, therefore it turns very rapidly. The eccentric drums always leave the gear revolving, which runs at a very high speed when the car returns, causing them to rattle and break. In the above drum we do not use an eccentric, but instead, a friction clutch. This is simple in construction, requires no care and leaves nothing but the drum revolving when the car returns to the bank. This drum is 18 inches in diameter and 28 inches long. This is so large that there is no danger of breaking the strands in the wire rope. The frame is made of well-seasoned oak. The ends in which the bearings rest are of cast iron. The frame is well rodded and we consider it very much stronger and more durable than an iron frame. It requires no extra framing and can be bolted directly to the upper part of the track timbers. The above cut shows the drum being driven by spur gears. We construct this either with a bevel or spur gear, so as to suit the location of the shaft from which it is to be driven. By this we avoid the use of cross or twist belts. The drive pulley is 16 inches in diameter, 8-inch face. The spur gear drum should run 110 revolutions per minute; bevel gear drum 100 revolutions per minute.

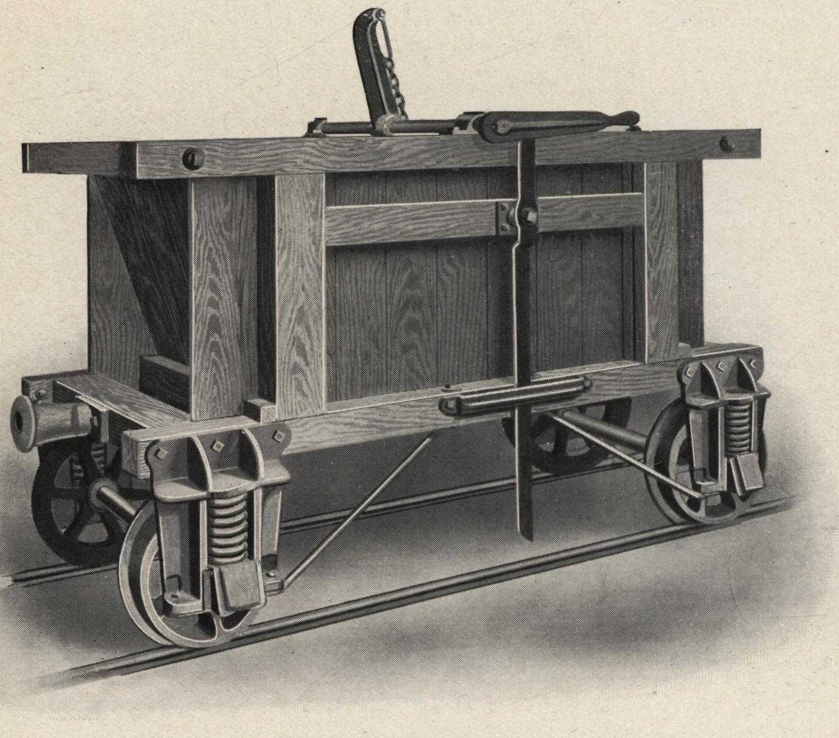


Elevators

After various experiments, trying canvas and iron slatted belts, we gave them up and used the plain rubber belt. We find that this makes the cheapest and most durable elevator that can be made. As will be seen by referring to the cut, the sides or the frame to which the drums and rollers are attached do not extend above the belt; that the sides which keep the clay on the belt are held with bracket castings and project over and inside of the belt. This leaves the belt clear so that it can run sideways and will not strike or rub against the sides. The drum at the lower end of the elevator is made of wrought iron slats. It is impossible for the clay to build on this drum; it will fall through the slats and roll out at the side. Each elevator is provided with belt tightners, also tight and loose pulleys. We make these in any length desired and with 16 or 20-inch belts. The 16-inch belt has a 12-inch carrying surface; the 20-inch belt a 16-inch carrying surface. The timber used in their construction is well seasoned. The belt is made of any weight desired; our standard belts being four-ply rubber.

The carrying rolls are of wood turned concave, iron pins in each end, the journal boxes for these rolls have large oil chamber with an opening in the end to enable oiling and at the same time keep out all dust and dirt. All gears covered with guard.

Clay Cars

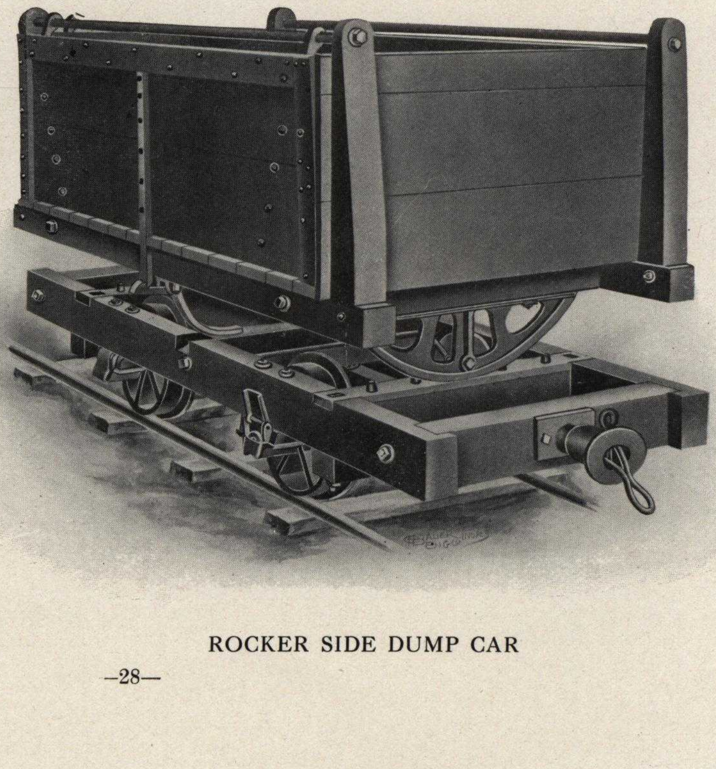


BOTTOM DUMP CAR

As will be seen by referring to the cut, the axle extends across the frame of the car, both wheels being fitted to it. The axle revolves in self-oiling boxes, which are held in place by heavy car springs. All bottom dump cars now on the market, and those formerly made by us, had the wheels fastened to solid trunions on the side of the car. This made the wheels so rigid that they would not give to uneven places in the track; thus the car gave considerable trouble in jumping from the track. As it is now constructed we overcome this trouble, and are confident that it is the best bottom dump car made. The wheels are 16 inches in diameter, and are chilled. This is the only sure self-dumping car that can be made.

The side car dump is so constructed that it can be dumped from either side. The rockers and plates are heavy cast iron. The frame is made of well seasoned oak, thoroughly bolted and rodded. Wheels 16 inches diameter with chilled face axles of steel, running in boxes provided with oil and waste chamber.

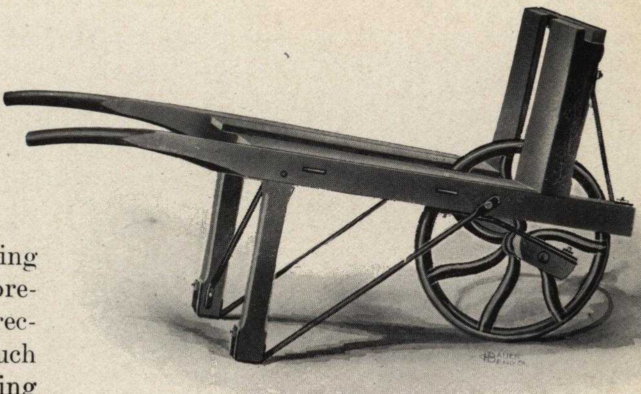
Either side or bottom dump cars will be made any capacity or rail gauge desired. The standard capacity is 1½ yards.



ROCKER SIDE DUMP CAR

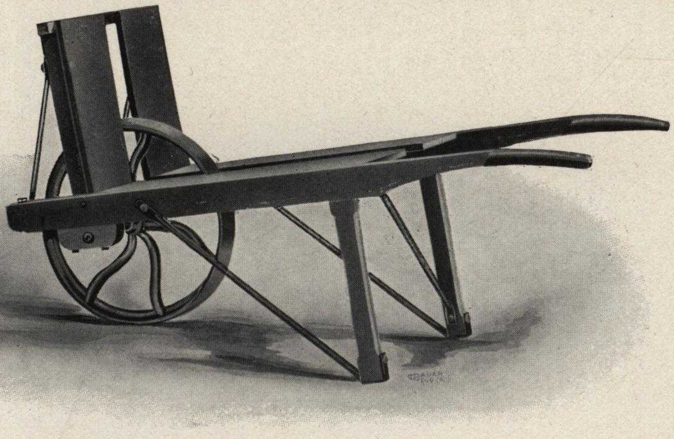
Barrows

The No. 5 Barrow is intended for handling repressed brick. When it is desired to preserve the fruits of repressing, we always recommend the Spring Barrow. They are much easier to handle, and the danger of defacing the brick by jarring is obviated. It has iron wheel and axle. The bearings are made of hard wood, the springs of tempered steel.



No. 5 SPRING BARROW

Price, with Springs	$7.50
Price, without Springs	6.00

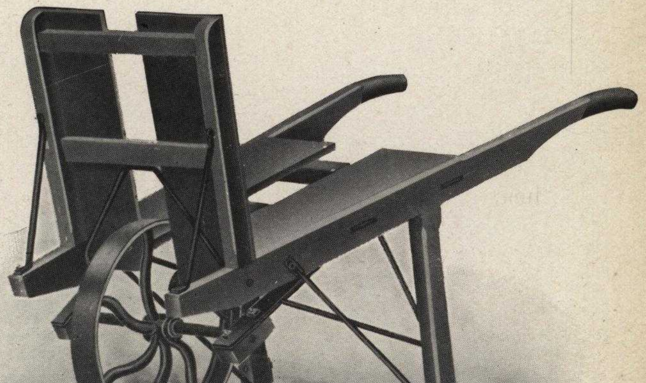


No. 6 BARROW

Price	$6.00

No. 6 Barrow. To meet the demand for a cheap barrow, we have designed the one shown above. It is well made, having iron wheel and axle, with wooden bearings. As will be seen, it is thoroughly braced.

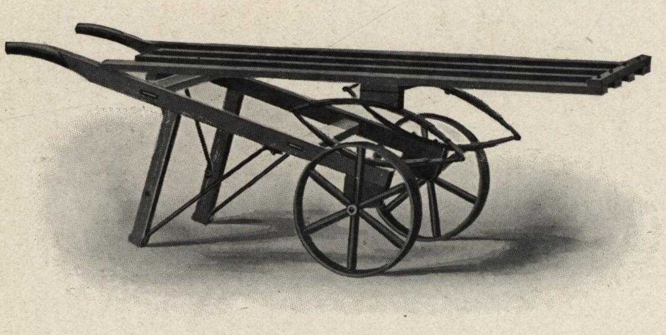
This is, without doubt, the strongest and most durable Barrow on the market. The legs and front are cross-braced underneath. It has iron wheel and axle running in wood bearings. The dash is set high and square with the bottom. The load is balanced over the wheel, which enables the men to wheel large loads. The springs make it easy riding, and prevent the corners and edges of the brick from being bruised. For strength and durability it has no equal. Write for discount.



No. 2 BRICK BARROW

Price, with Springs	$8.25
Price, without Springs	7.00

Trucks



No. 1 SINGLE DECK TRUCK

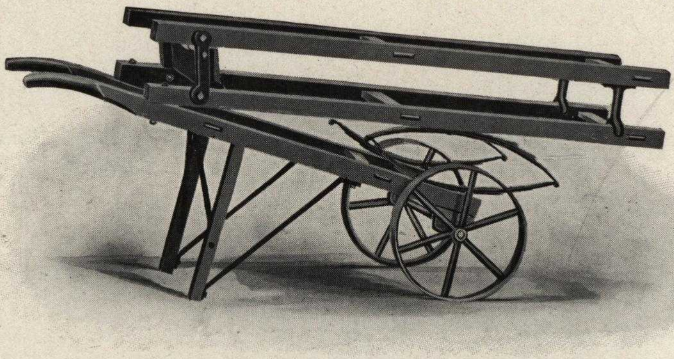
Price, with Two Wheels	$8.25
Price, with One Wheel	8.00

No. 1
Single Deck Truck

We make this with either one or two wheels and one handle, as may be desired by our customers. We use a three-leaf wagon seat spring. The wheels are iron, and where the truck is used on an open yard they are made with wide face so they will not cut the yard.

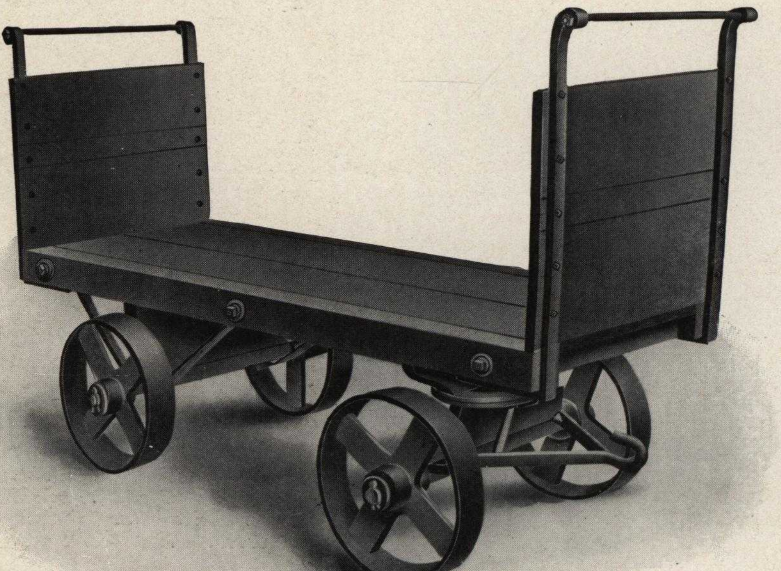
No. 3
Double Deck Truck

This truck will carry ten pallets each 10¼ inches wide. When desired, we make these trucks with one wheel, thus requiring only a single run plank between the racks. This truck will save one man each day over the single deck. We also make the top deck to open out sideways; these do not require high racks to enable opening up.



No. 2 DOUBLE DECK TRUCK

Price, with Two Wheels	$11.75
Price, with One Wheel	11.00



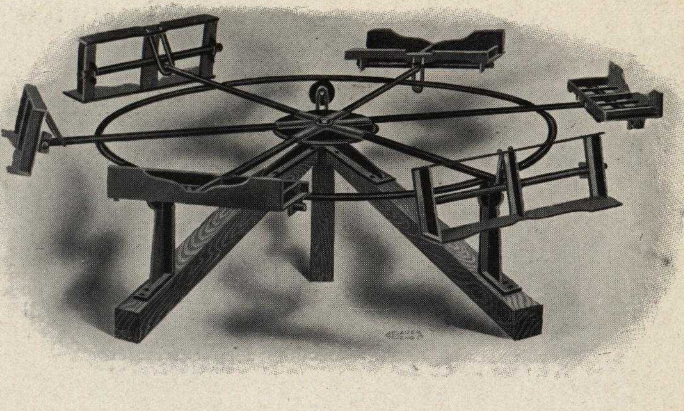
Mule Trucks

For handling brick from yard to kiln. A strong, well made and durable truck. Wheels have wide face turn under bed. Will carry 500 standard size brick.

Revolving Dump Table

The frame is made from heavy pipe, dump boards of cast iron. This makes a light table to turn, at the same time a strong and durable one.

Made with 4, 5 or 6 dump boards as desired; weight about 200 pounds.

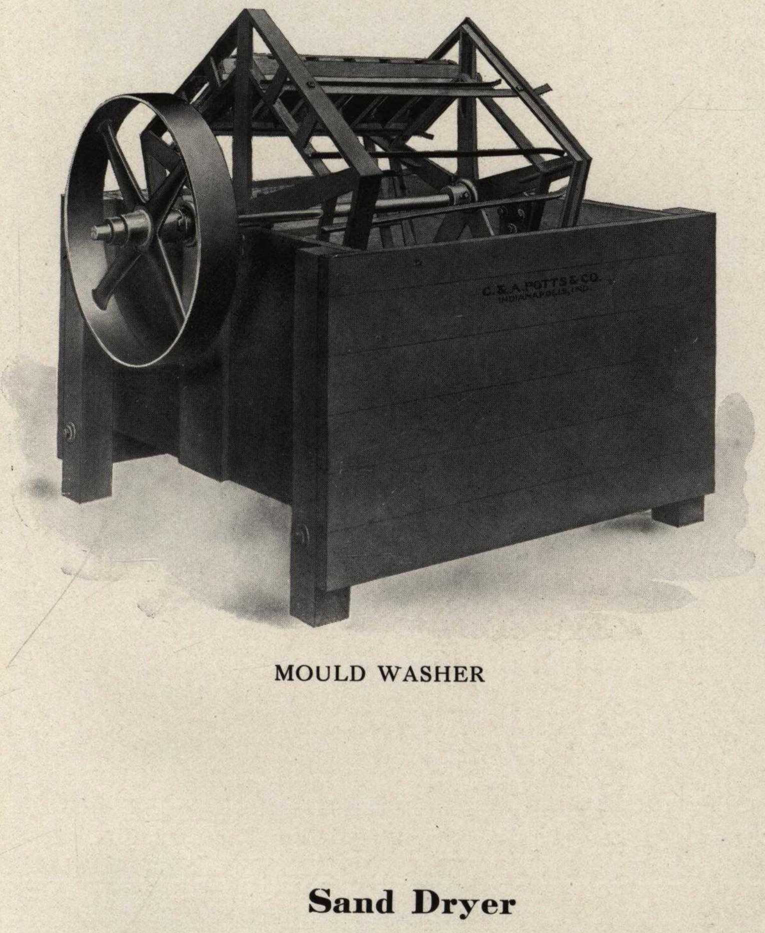


REVOLVING DUMP TABLE
The only All Iron Dump Table made

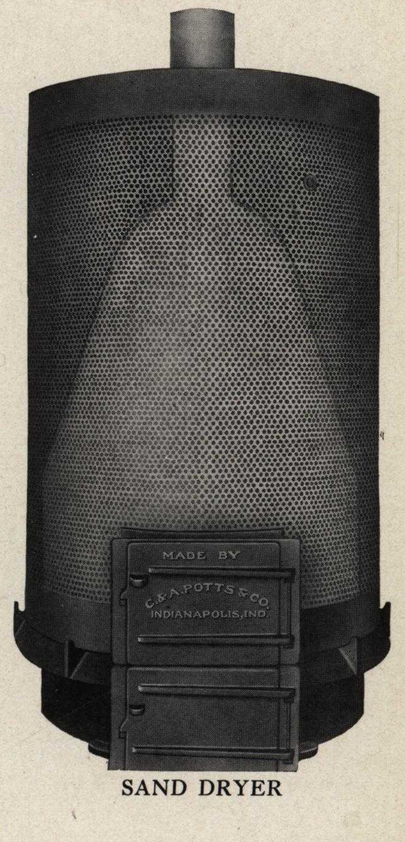
Mould Washer

A machine to wash the moulds. Saves labor and time. Is made of steel, and so arranged that the moulds are automatically held in place. No nuts or springs to give trouble.

Fully guaranteed and shipped subject to trial. Weight about 500 pounds.



MOULD WASHER

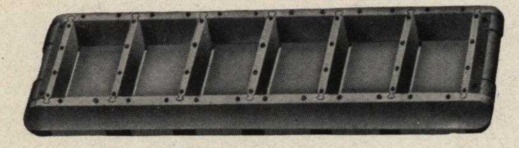


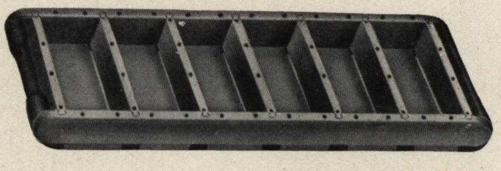
SAND DRYER

Sand Dryer

A sure and cheap way of drying sand. This dryer is very heavy, so all danger of springing and warping is overcome. The screen around it is made of heavy perforated steel. We will be pleased to ship subject to trial. Weight, 1,150 pounds.

Machine Moulds

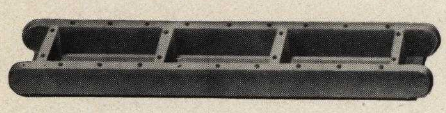




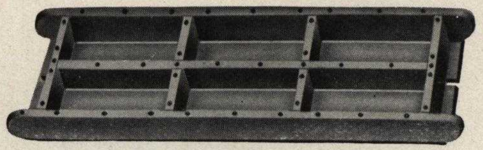
Standard Grade Machine Moulds, made of cherry or sugar maple, as desired. The sides are 13/16-inch thick, bottoms ⅝-inch, partitions any thickness desired. The sides are gained for each partition and two mortises made to receive the double tenon on partition. All moulds are bound with special grade of extra hard steel

Special Grade Machine Moulds are a stronger mould, made from selected hard cherry, bound with No. 10 steel. Longer screws are used. These moulds are well made and as strong as is possible to make them.

We guarantee all moulds and ship subject to inspection when they arrive at your depot, and, if they are not as represented, you return at our expense.

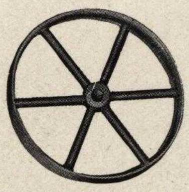


THREE-BRICK HAND MOULD

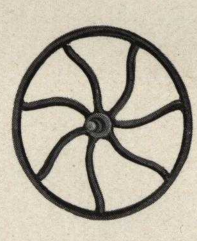


SIX-BRICK HAND MOULD

Truck and Barrow Wheels

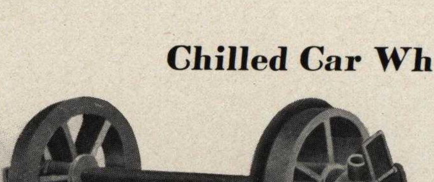


17 inches diameter; 3½ inches face:	
Price, without axle	$1.25
Price, with axle	2.25
17 inches diameter; 2¼ inches face:	
Price, without axle	1.00
Price, with axle	2.00

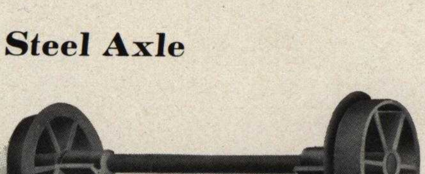


19 inches diameter; 2½ inches face:	
Price, without axle	$1.35
Price, with axle	2.50

Chilled Car Wheels and Steel Axle



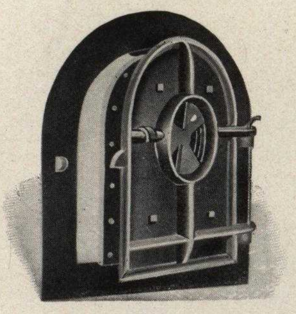
Wheels 16 inches diameter; axle 2 inches diameter:	
Price of wheel, bored	$2.75
Price of two wheels and axle	9.50
Car Boxes, each	1.00



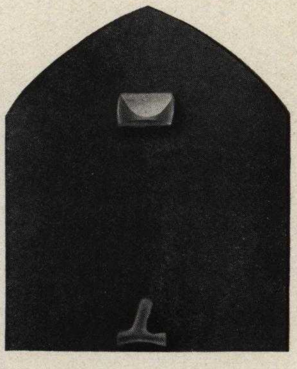
Wheels 12 inches diameter; axle 1½ inches diameter:	
Price of wheel, bored	$2.25
Price of two wheels and axles	6.50
Solid boxes, bored, each	.75

The wheels are not held with set-screws or keys, as is the case with those made by other manufacturers. We press or shrink every wheel on. This makes it impossible for them to work loose or come off. We make any tread of wheel desired. We have a large variety of sizes and styles of car wheels.

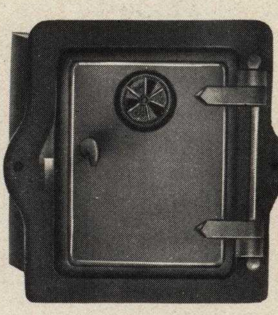
Kiln Doors and Frames



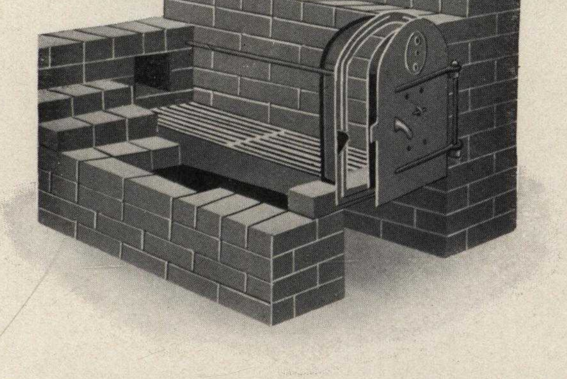
CIRCLE TOP



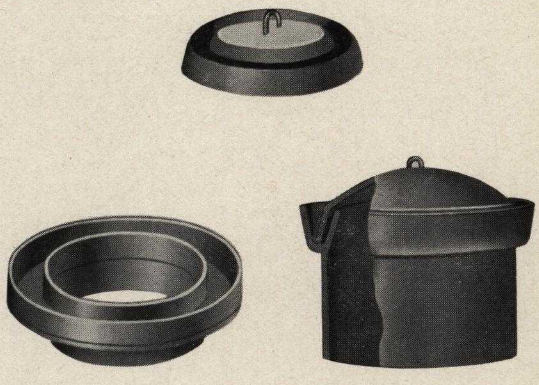
KILN SHUTTER



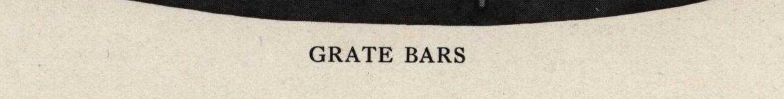
SQUARE TOP



SHOWING KILN DOOR AND GRATES AS SET IN ARCH

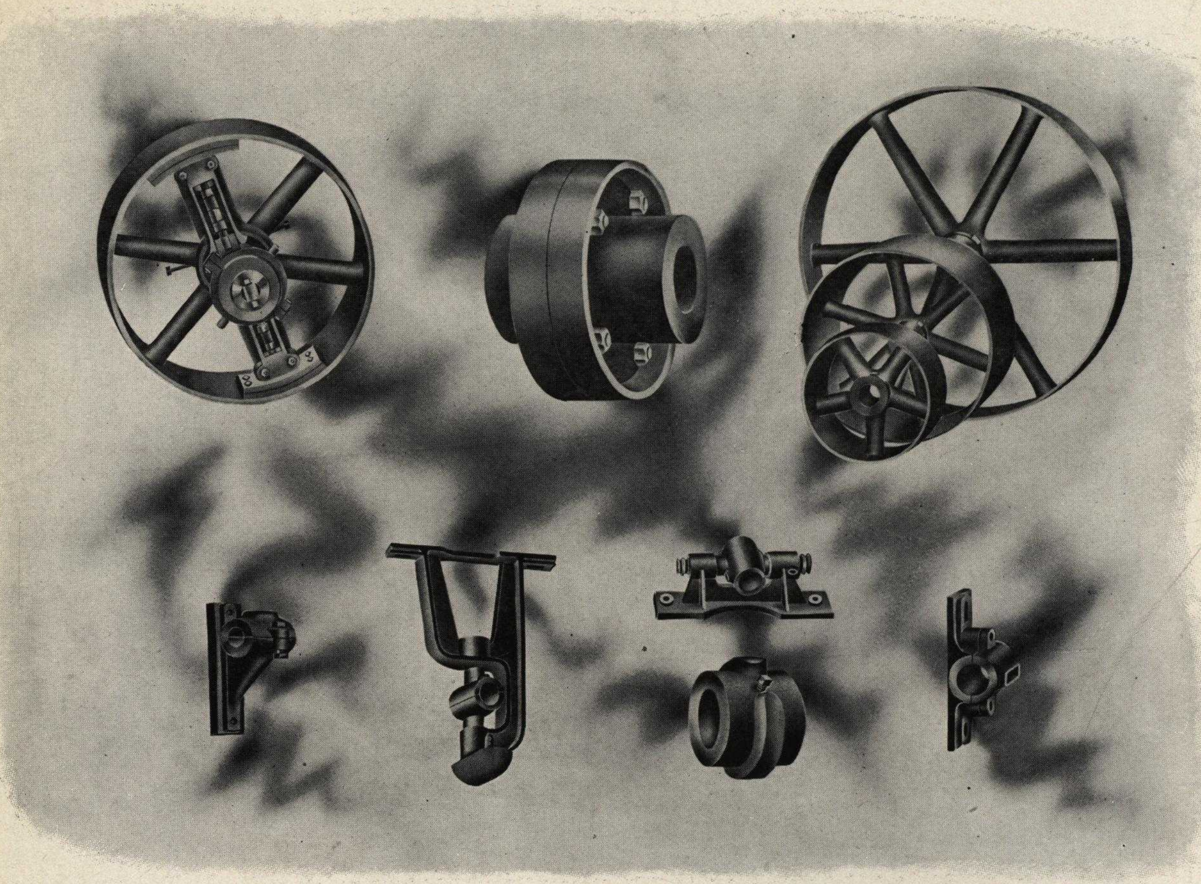


VENTILATORS



GRATE BARS

KILN BANDS AND KILN CASTINGS MADE TO ORDER



Friction Pulleys

Pulleys—iron or wood. Couplings, flange or compression; boxes and hangers plain or ring oiling. Safety set collars.

Shafting that is guaranteed to be accurate in size and perfectly straight.

We are also prepared to furnish the best grade of rubber, leather and canvas belting.

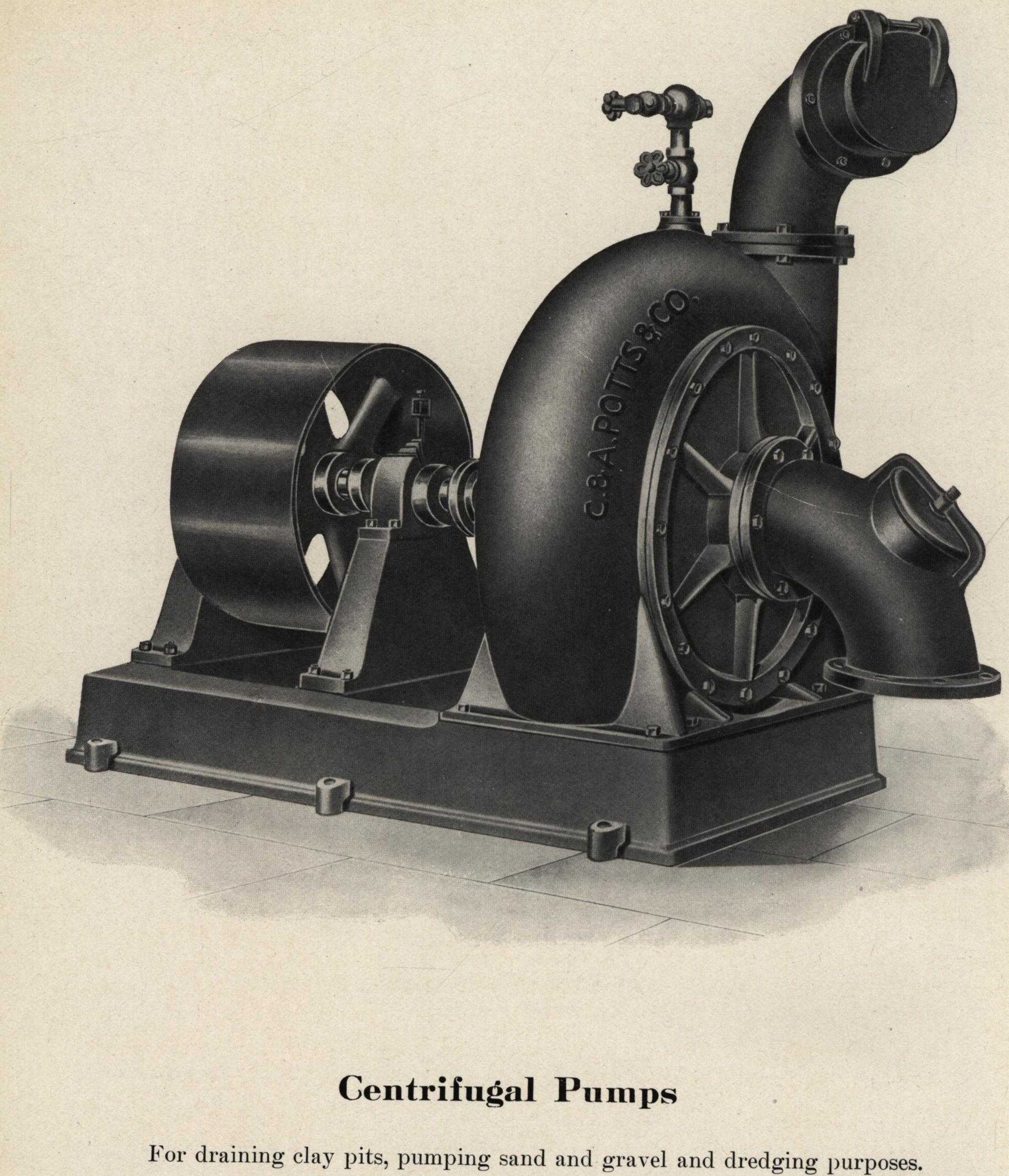
Write for price and discount.

Rope Conveyors

We are prepared to make estimates on Rope Conveyors for carrying bricks to the Rocker and the return of the pallets to machine.

Our drive head is simple in construction, the tightener ends are made for quick adjustment. The stands for rollers are cast in solid frame with ample width for return of pallets.

Write for estimates and photographs.

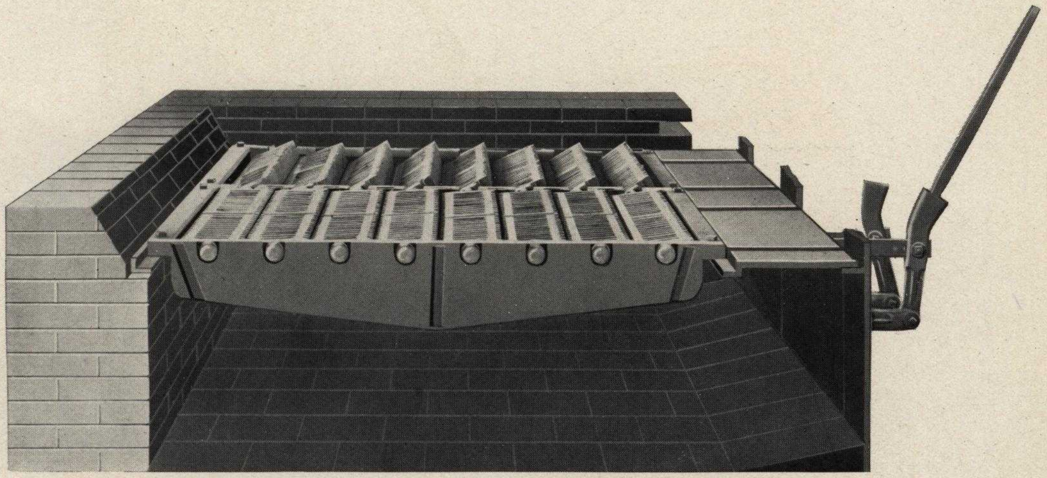


Centrifugal Pumps

For draining clay pits, pumping sand and gravel and dredging purposes. These pumps are simple in construction and will not refuse to work properly under all conditions. The hull is extra heavy, made from a mixture of steel and iron. The piston well balanced, made of the same material.

Made in three sizes, 6, 8 and 10 inch.

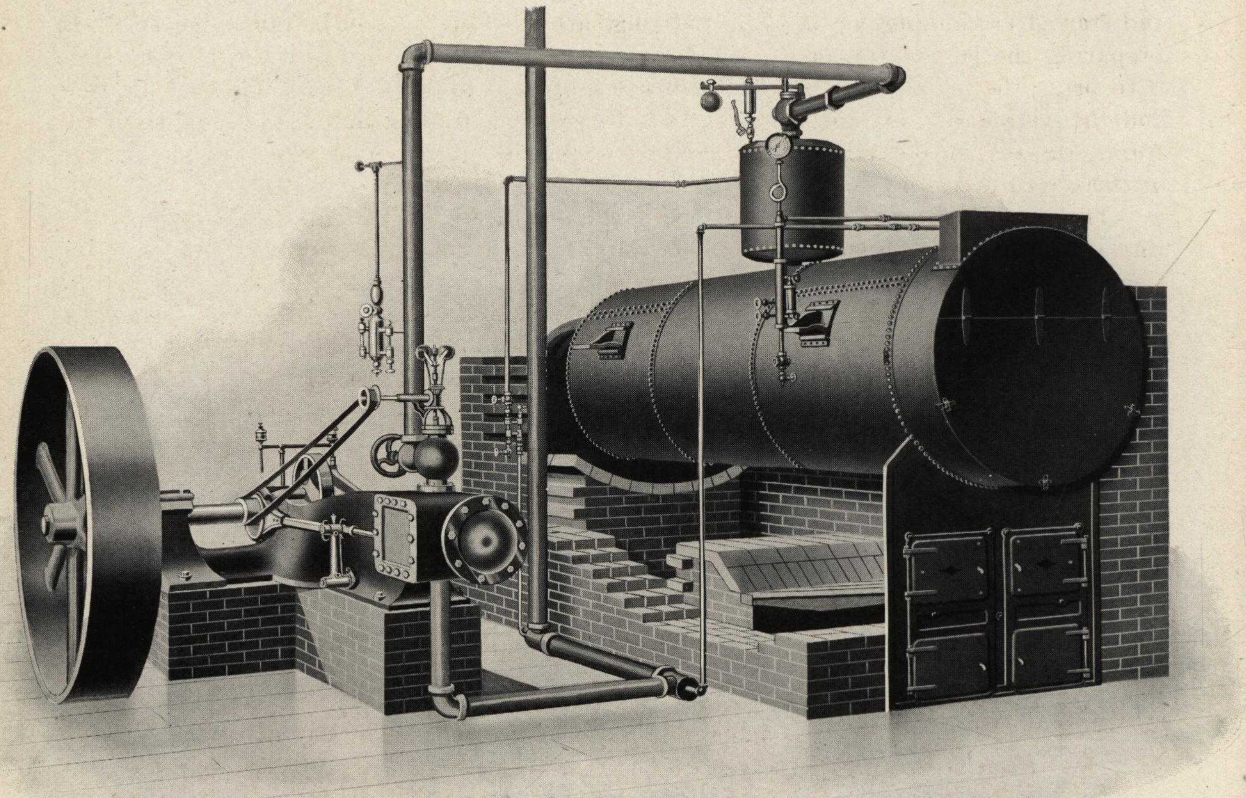
For further particulars write for special catalog.



Rocker Grates

Our shaking or rocking Grates are simple in construction. We are prepared to make them for any size boiler or kiln fire box, by giving width of fire box and length of grate bar now in use, and width of dead plate. We can give size of grates needed with all connections ready to install.

Write for information and prices.



ENGINE AND BOILER

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Self-Contained Engines and Boilers

Our standard Engine is what we term Self-Contained, that is to say, both of the main journal bearings carrying the crank shaft of the engine are rigidly attached to and made a part of the main bed frame. This, aside from maintaining the crank shaft absolutely square with the other moving parts of the engine, obviates all the trouble which frequently results from not properly squaring the crank shaft with the other working parts at the time the engine is being placed upon its foundation. In addition to this, and for the same reason, it is impossible to get the engine out of line after it has been set up and started to running, as the crank bearings are fixed and cannot be tampered with. In preparing the engine for running, all that is necessary in adjusting it on its foundation is to bring the main shaft parallel with the shaft it is to drive, fasten it in that position, and the engine is ready to operate. As both bearings are fastened to the same rigid bed frame, timber can be used as a foundation to set the engine upon with excellent results in those localities where brick or stone cannot be easily obtained.

The fact that every Self-Contained Engine is tested under full steam pressure before leaving the factory, thereby bringing all parts into perfect adjustment, gives an additional advantage to our engines. On account of the Self-Contained feature, it is not necessary to change this adjustment in shipping, and therefore when the engine arrives at destination, it is in precisely the same adjustment and condition as when it left the factory; and thus, when the steam connections are made, and the steam turned on, the engine starts off as promptly and in as careful adjustment as when it was running at the time of its test. This form of Self-Contained Engine has all of the advantages of a Center Crank Engine with none of its disadvantages.

The details of the engine are very simple, and the size of all parts, especially the wearing and bearing parts, reduces all repairs to a minimum. Every part of the engine is made on the interchangeable plan, and is lettered and numbered, so that in case of breakage or repair the letter and number of the desired part can be given to the factory by telegraph and a duplicate part be on its way the same day that the telegram is received.

The claims which we make for our boilers are that in material and construction they are superior to the ordinary commercial boiler, and that, in spite of the slight increase of price, made necessary by the increased superiority, it is more advantageous for the purchaser of a steam plant to purchase the engine and boiler from the same factory, in order that all fittings and fixtures necessary to make the outfit complete may be included with the shipment, and thus in the end save the time and expense consequent upon misunderstandings which would likely occur if the engine and boiler were purchased in different places.

We beg to add, also, that full detailed plans and directions for erection accompany each outfit, which enable the workmen to properly erect and start the machinery, and those who favor us with their orders may feel assured that extreme care will be observed in the execution of their requests, and that their orders will receive prompt consideration and shipment.

Our engines and boilers are in operation in all parts of the country, furnishing power for electric plants, flour mills, brick and tile factories, saw mills and plants and factories of all classes that require steam power, and are giving continuous and economical service, as our many clients will testify.

If you wish to purchase substantially and conscientiously made goods which are economical in operation and attendance, and which will not require constant repairs, it will be to your advantage to write for further information.

WE ARE PREPARED

to furnish drawings
for
motor driven plants
either direct connected or with belts